



**AGENDA**  
**RIO DELL CITY COUNCIL**  
**REGULAR MEETING – 6:30 P.M.**  
**TUESDAY, AUGUST 5, 2014**  
**CITY COUNCIL CHAMBERS**  
**675 WILDWOOD AVENUE, RIO DELL**

*WELCOME . . . By your presence in the City Council Chambers, you are participating in the process of representative government. Copies of this agenda, staff reports and other material available to the City Council are available at the City Clerk's office in City Hall, 675 Wildwood Avenue. Your City Government welcomes your interest and hopes you will attend and participate in Rio Dell City Council meetings often.*

*In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Office of the City Clerk at (707) 764-3532. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to assure accessibility to this meeting.*

**THE TYPE OF COUNCIL BUSINESS IS IDENTIFIED IMMEDIATELY AFTER EACH TITLE IN BOLD CAPITAL LETTERS**

- A. CALL TO ORDER**
- B. ROLL CALL**
- C. PLEDGE OF ALLEGIANCE**
- D. CEREMONIAL MATTERS**
- E. PUBLIC PRESENTATIONS**

*This time is for persons who wish to address the Council on any matter not on this agenda and over which the Council has jurisdiction. As such, a dialogue with the Council or staff is not intended. Items requiring Council action not listed on this agenda may be placed on the next regular agenda for consideration if the Council directs, unless a finding is made by at least 2/3rds of the Councilmembers present that the item came up after the agenda was posted and is of an urgency nature requiring immediate action. Please limit comments to a maximum of 3 minutes.*

**F. CONSENT CALENDAR**

*The Consent Calendar adopting the printed recommended Council action will be enacted with one vote. The Mayor will first ask the staff, the public, and the Council members if there is anyone who wishes to address any matter on the Consent Calendar. The matters removed from the Consent Calendar will be considered individually in the next section, "SPECIAL CALL ITEMS".*

- 1) 2014/0805.01 - Building Inspection Program Report **(RECEIVE & FILE)**
- 3) 2014/0805.02 - Authorize the Finance Director to Sign and Submit Annual TDA Claim **(ACTION)**
- 3) 2014/0805.03 - Authorize the City Manager to Execute Continued Contract with Adult Day Health Services for FY 2014-2015 **(ACTION)**

#### G. SPECIAL PRESENTATIONS

#### H. SPECIAL CALL ITEMS/COMMUNITY AFFAIRS

- 1) "SPECIAL CALL ITEMS" from Consent Calendar
- 2) 2014/0805.04 - Report Regarding Black-Water Discharge on First Ave. **(DISCUSSION/POSSIBLE ACTION)**
- 3) 2014/0805.05 - Draft Report Produced for Humboldt Bay Municipal Water District Related to a Reconnaissance-Level Pipeline Route Study **(DISCUSSION/POSSIBLE ACTION)**

#### I. ORDINANCES/SPECIAL RESOLUTIONS/PUBLIC HEARINGS

- 1) 2014/0805.06 - Adopt Resolution No. 1236-2014 Approving Budget Amendment of \$21,000 for Regional Surface Transportation Program (RSTP) and authorize the Finance Director to Submit Claim **(ACTION)**
- 2) 2014/0805.07 - Introduce and conduct first reading (by title only) of Ordinance No. 324-2014 Amending Fence Regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC) **(ACTION)**
- 3) 2014/0805.08 - Introduce and conduct first reading (by title only) of Ordinance No. 325-2014 Amending Chapter 17.30 of the Rio Dell Municipal Code (RDMC) to Renumber the General Provisions and Exceptions to Accommodate Recent Amendments **(ACTION)**
- 4) 2014/0805.09 - Adopt Resolution No. 1237-2014 Accepting the Easement Deed for a ten (10) Foot Waterline Easement from the Dollar General to the City and authorizing the City Manager to execute the Certificate of Acceptance **(ACTION)**

#### J. REPORTS/STAFF COMMUNICATIONS

1. City Manager
2. Chief of Police
3. Finance Director
4. Community Development Director

K. COUNCIL REPORTS/COMMUNICATIONS

L. ANNOUNCEMENT OF ITEMS TO BE DISCUSSED IN CLOSED SESSION AS  
FOLLOWS: **No Closed Session Items Scheduled**

M. ADJOURNMENT

*The next regular meeting will be on August 19, 2014  
at 6:30 p.m. in City Hall Council Chambers*

**675 Wildwood Avenue  
Rio Dell, CA 95562**



TO: Rio Dell City Council  
THROUGH: Kyle Knopp, City Manager  
FROM: Karen Dunham, City Clerk  
DATE: August 5, 2014  
SUBJECT: Building Inspection Program Update

**RECOMMENDATION**

Receive and file staff report.

**BACKGROUND AND DISCUSSION**

As you are aware, the City contracted with the City of Fortuna for building inspection and plan check services with the termination of Arnie Kemp's contract effective February 18, 2014.

In addition, administration fees were established for the purpose of generating sufficient revenue to fully fund the Program without subsidy from the General Fund.

Staff was directed at that time to provide a written report to the City Council on a quarterly or semi-annual basis to determine if sufficient revenue is collected to fund the building department program.

The City of Fortuna has invoiced the City for their services for the period of February 19, 2014 through July 18, 2014. For the 5 month period, total costs were billed at \$2,971.90.

For the same period, the following fees were collected:

- Building Permit Fees - 7,796.17
- Plan Check Fees - 2,788.32
- Administration Fees - 5,408.46

TOTAL - \$15,992.95

Under the prior contract with Arnie Kemp he received 80% of all building and plan check fees collected. The cost for his services under that contract would have been \$8,467.59 in addition to \$885.50 for 5 months of insurance reimbursement costs at \$177.10/month bringing the total costs for building inspection and plan check services to \$9,353.09 for a net difference of \$6,381.39 between the prior contract and the current agreement with the City of Fortuna.

Beginning May 5, 2014 a building administrative fee of 33% was collected on all building permits. On July 1, 2014, the administrative fee was increased to 66%. Staff will continue to monitor the building program activities and report to the Council.

675 Wildwood Avenue  
Rio Dell, CA 95562



**CITY OF RIO DELL  
STAFF REPORT  
CITY COUNCIL AGENDA  
Tuesday August 5, 2014**

TO: Mayor and Members of the City Council  
THROUGH: Kyle Knopp, City Manager *[Signature]*  
FROM: Brooke Woodcox, Finance Director *[Signature]*  
DATE: August 5, 2014  
SUBJECT: **Transportation Development Act (TDA) Claim**

**RECOMMENDATION**

Authorize the Finance Director to sign and submit the City's annual TDA Claim

**BUDGETARY IMPACT**

Total TDA funds of \$108,609.

**BACKGROUND AND DISCUSSION**

Each year the City submits an annual transportation claim to the Humboldt County Association of Governments (HCAOG) to access its annual Transportation Development Act funds. The City has completed the required process including holding a public hearing to receive input from the community. The 2014-2015 projected allocation is \$108,609, a 5% increase from the prior year. Proposed projects outlined in the City's 2014-2015 financial plan includes \$40,646 to be provided to Humboldt Transit Authority for share of costs for transit services within the City, \$6,630 to be provided to the Humboldt Senior Resource Center for senior transportation, and \$61,333 for ongoing street repair, maintenance, and construction within the City.

**ATTACHMENTS**

Annual Transportation Claim 2014-2015

## APPENDIX C. ANNUAL CLAIM FORMS

### CHECKLIST FOR ANNUAL LTF & STAF CLAIMS

By April 1 of each year, or at such time as preliminary budgeting information is available, the claimant shall file an annual claim with HCAOG.

■ **Non-Transit Claims:** Claimants shall submit items (a) through (d), inclusive, as part of the claim.

■ **Transit Claims:** An operator or transit service claimant shall submit items (a) thru (h), inclusive, to file a claim.

**ALL claims must include items (a) through (d), inclusive.**

HCAOG forms for parts (a), (b), and (c) are provided in this Excel file and on-line at [www.hcaog.net](http://www.hcaog.net).

*Claimants are responsible for making sure they submit the most current forms.*

- ☒ a) HCAOG "Claim Request" form. *[Included in following sheet]*
- ☒ b) HCAOG "Annual Project and Financial Plan" form. *[Included in following sheet]*
- ☒ c) HCAOG "Statement of Conformance" form. *[Included in following sheet]*
- ☐ d) Claimants who want to designate funds for a future, specific capital project must request it as part of a claim. The claim must indicate any reserved monies in the subsequent annual claim(s). Before expending these funds for any other purpose, the claimant must identify its proposed changes in an amended claim or subsequent annual claim. [CCR §6648]

**Only transit claims must include items (e), (f), (g), and (h):**

- ☐ e) To receive an allocation of funds for service outside the claimant's area, a claimant must provide, or have on file with HCAOG, an executed contract pursuant to PUC sections:
  - §99231(f) -- Apportionment: Where a county or city provides public transportation services beyond its boundaries;
  - §99260.2 -- Claims for peak-hour service;
  - §99260.7 -- Claims for separate service to elderly and handicapped persons by JPA members;
  - §99277 -- Service contracts;
  - §99288 -- Extended service by contract or authorization;
  - §99400(c) -- Claims Purposes: payment to entities under contract; or
  - §99400.5 -- Multi-modal transportation terminals.
- ☐ f) If applicable, a statement identifying and substantiating the reason or need for: (1) increasing the operating budget in excess of 15% above the preceding year; (2) a substantial increase or decrease in scope of operations; or (3) capital provisions for major new fixed facilities.
- ☒ g) A certification by CHP verifying that the operator is in compliance with §1808.1 of the Vehicle Code, as required in PUC §99251. The certification shall have been completed within the last 13 months, prior to filing claims.
- ☐ h) A financial statement of actual and projected revenues and expenditures for the prior fiscal

*For full information on claim requirements, see HCAOG's TDA Rules (part IV, "TDA REQUIRED REPORTS" Report #16).*

## CLAIM REQUEST

Check one:

☐ **State Transit Assistance (STA) Fund**

☒ **Local Transportation Fund (LTF)**

**Claimant:** City of Rio Dell

**Address:** 675 Wildwood Avenue, Rio Dell, CA 95562

**Contact Person:** Brooke Woodcox

**Title:** Finance Director

**Phone:** (707) 764-3532

**E-mail:** finance1@riodellcity.com

The City of Rio Dell hereby requests, in accordance with the Transportation Development Act of 1971, Chapter 1400, and applicable rules and regulations, that its annual transportation claim be approved in the amount of \$ 108,609 for fiscal year 2014-2015. These monies are to be drawn from the local transportation fund of the County of Humboldt for the purposes and amounts shown in the attached "Annual Project and Financial Plan."

When approved, please transmit this claim to the County Auditor of the County of Humboldt for payment. Approval of the claim and payment by the County Auditor to this applicant is subject to such monies being on hand and available for distribution, and to the provisions that such monies will be used only in accordance with the terms of the approved annual financial plan.

Authorized representative of claimant:

By: Brooke Woodcox  
(print name)

Title: Finance Director

Signature: \_\_\_\_\_ Submittal date: \_\_\_\_\_

### APPROVED:

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Marcella Clem  
Executive Director, Humboldt County Association of Governments



## ANNUAL PROJECT AND FINANCIAL PLAN

Give each project a title and number in sequence, and briefly describe the transportation projects that your jurisdiction proposes. Indicate proposed expenditures for the ensuing fiscal year for all that apply:

- (i) public transportation operating and capital expenditures;
- (ii) construction of facilities for the exclusive use by pedestrians and bicyclists;
- (iii) construction of local streets and roads; and/or
- (iii) right-of-way acquisition.

Claimant: City of Rio Dell

Fiscal Year: 2014-2015

PROJECT (Project number, title, & brief description)	TDA - LTF \$ amount	PUC Article & Section	TDA - STA \$ amount	CGR Section	Local Fund Balance	Other	TOTAL
06-01 HTA/RTS Share of Cost	\$ 40,646	4-99260(a.)	\$ -		\$ -		\$ 40,646
06-02 HSRC Share of Cost	\$ 6,630	8-99400(c.)	\$ -		\$ -		\$ 6,630
06-03 Street Repair, Const. Maint.	\$ 61,333	8-99400(a.)	\$ -		\$ -		\$ 61,333
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
	\$ -	-	\$ -		\$ -		\$ -
<b>TOTAL</b>	<b>\$ 108,609</b>		<b>\$ -</b>		<b>\$ -</b>	<b>-</b>	<b>\$ 108,609</b>

## STATEMENT OF CONFORMANCE

**Claimant** City of Rio Dell

**Fiscal Year of Claim:** 2014-2015

*Certify all that apply.*

☐ **STATE TRANSIT ASSISTANCE (STA) FUND - TRANSIT CLAIM  
TRANSIT OPERATOR ELIGIBILITY**

*Provide information for the previous two fiscal years.*

	Fiscal year	Fiscal year
	<u>          </u>	<u>          </u>
System Operating Costs	\$ -	\$ -
System Revenues	\$ -	\$ -
System Vehicle Service Hours	\$ -	\$ -

HCAOG staff use only

Subsidy per revenue vehicle hour \_\_\_\_\_  
Percent difference \_\_\_\_\_  
Regional CPI \_\_\_\_\_

☒ **NON-TRANSIT CLAIM**

The claimant named above hereby certifies that this annual claim for local transportation funds in the amount of \$ 61,333 conforms with the requirements of Article 8, PUC Section 99400, of the Transportation Development Act of 1971, and applicable rules and regulations.

**CERTIFIED BY CLAIMANT:**

By: Brooke Woodcox

**Title: Finance Director**

**Signature:** \_\_\_\_\_

Date: \_\_\_\_\_



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675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532  
(707) 764-5480 (fax)  
E-mail: [cm@riodellcity.com](mailto:cm@riodellcity.com)

**CITY OF RIO DELL  
STAFF REPORT  
CITY COUNCIL AGENDA  
August 5, 2014**

TO: Mayor and Members of the City Council  
THROUGH: Kyle Knopp, City Manager *[Signature]*  
FROM: Brooke Woodcox, Finance Director *[Signature]*  
DATE: August 5, 2014  
SUBJECT: **Adult Day Health Services Contract**

**RECOMMENDATIONS**

Authorize the City Manager to execute a continued contract agreement with Adult Day Health Services for transportation services for the fiscal year 2014-2015.

**BACKGROUND AND DISCUSSION**

The City of Rio Dell has contracted with Adult Day Health Services of Fortuna for many years to provide transportation services for residents of Rio Dell who are disabled and/or 55 years of age and older. The City receives Transportation Development Act (TDA) funding through the Humboldt County Association of Governments (HCAOG) for this purpose.

**FISCAL IMPACT**

The cost of the upcoming year's services is \$6,630. Funding for said services is provided through the cities TDA allocation and is currently included in the 2014-2015 operating budget.

**ATTACHMENTS:**

(1) Contract Agreement

**CONTRACT AGREEMENT  
TRANSPORTATION SERVICES FOR THE ELDERLY  
AND FUNCTIONALLY DISABLED**

This agreement made and entered into and made effective as of July 1, 2014, by and between the City of Rio Dell (hereinafter referred to as "City"), and Adult Day Health Services of Fortuna, a private, non-profit organization (hereinafter referred to as "Provider"), for the period of July 01, 2014 to June 30, 2015, regarding provision of the following services:

Transportation for Adult Day Health Services Program Participants

IT IS MUTUALLY AGREED by and between City and Provider as follows:

1. Provider shall perform, in a satisfactory and proper manner, transportation services between the City of Rio Dell and Adult Day Health Care Center, to persons fifty-five (55) years of age and older and for disabled individuals.
2. City shall compensate Provider per ride, round trip, up to a total compensation of \$6,630.
3. Services will be available through the entire twelve (12) month period of contract.
4. Any changes in scope of service, including any increase or decrease in compensation which is agreed upon between the parties, shall be effective when incorporated in written amendments to the Agreement. No oral understanding or agreement shall be binding to the parties hereto.
5. Compensation shall be paid to Provider upon receipt of properly completed financial reports. Total annual compensation shall not exceed TDA funds requested and received by the City from HCAOG for this purpose.
6. Provider agrees to comply with all applicable federal, state and local laws, regulations, standards, policies, and standards of employment, included but not limited to, California Transportation Development Act rules and regulations. Provider also agrees to keep in effect all licenses, permits, notices, certificates, bonds, and insurance required for performing the service.
7. During the terms of this Agreement, Provider shall insure Provider and, as an additional primary insured, shall insure City, its officials, officers, and employees against all damages and claims for damages for bodily injury or property damage arising out of this Agreement or the use of any vehicle used to provide transportation hereunder and resulting from Provider's ownership, maintenance, or use of said vehicles, in the minimum amount of \$1,000,000 combined single limit. Provider shall furnish City with properly executed certificates of insurance and provide that such insurance shall not be cancelled, allowed to expire, or be materially reduced in coverage except on thirty (30) day prior notice to City
8. All vehicles operated in conjunction with the Transportation Development Act funds shall be subject to the following conditions;

Provider shall accept accountability and responsibility for operation of the vehicle(s);

Provider shall be responsible for all repair, rehabilitation, and maintenance costs for the vehicle(s);

Provider shall operated the vehicle(s) in compliance with all federal, state, and local laws and regulations, and keep in effect all licenses, permits, notices bonds and certificates. The driver of any vehicles designed to carry more than ten (10) persons, including the driver must have a Class B license. (California Administrative Code - Title 13, Subchapter 6.5)

9. Provider shall expend funds received solely for the purposes of this project
10. Termination of Suspension for Cause. Upon breach of this Agreement, City shall have the right to (1) suspend the project funded under this Agreement; or (2) terminate this Agreement, by giving written notice to Provider of such suspension or termination. City shall specify in writing the effective date thereof, at least five (5) days before the effective date of such suspension or termination.
11. Termination for Convenience. Either City or Provider may terminate this Agreement upon thirty (30) days written notice to the other party.

IN WITNESS THEREOF, City and Provider executed this Agreement

this \_\_\_\_\_ day of August 2014.

PROVIDER:

CITY OF RIO DELL:

\_\_\_\_\_  
Program Director

\_\_\_\_\_  
Kyle Knopp, City Manager

ATTEST:

\_\_\_\_\_  
Karen Dunham, City Clerk

*Rio Dell City hall  
675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532  
riodelcity.com*



August 5, 2014

TO: Rio Dell City Council

FROM: Kyle Knopp, City Manager

SUBJECT: Discussion and Possible Action on Report Regarding the Black-water Discharge of July 26, 2014, in the Area of the 200 block of 1<sup>st</sup> Avenue.

IT IS RECOMMENDED THAT THE CITY COUNCIL:

Receive, review and take action if deemed necessary.

BACKGROUND AND DISCUSSION

On July 29, 2014 the City Council unanimously called for an urgency item to appear on that night's agenda. The urgency item related to citizen complaints about a black-water discharge. Black-water is otherwise known as raw sewage. In this case, it was a black-water discharge from a motor home on the 200 block of 1<sup>st</sup> Avenue.

Citizens and residents in the area discussed the frustration that existing city ordinances related to the parking of motor homes, and use of motor homes as rental properties, were not being enforced. Residents also expressed concern for the health of the neighborhood and of the wider community, suggesting that this may not have been the only black-water discharge from this particular parcel.

The council directed staff to return with general facts on the situation and return on the August 5, 2014 meeting.

Police Review of the Black-Water Discharge

The Police Department was aware there was a motor home parked at 256 1<sup>st</sup> Avenue that was occupied. They remained at 256 1<sup>st</sup> Avenue longer than the 14 day allowable time period based on officers being told each time the residents of the motor home were contacted "the apartment was almost" ready for them to move into.

On July 26<sup>th</sup> at about 10:45 PM officers were called to the area of 256 1<sup>st</sup> Avenue for a foul odor. Upon arrival the responding officer, based on evidence he identified at the scene, determined the

odor was coming from recently dumped raw sewage. The officer determined, based on additional evidence the sewage had come from the motor home parked at 256 1<sup>st</sup> Avenue and went into the gutter on 1<sup>st</sup> Avenue. The officer took photographs and issued the resident a citation for H&S 115777 (A person who places, deposits, or dumps, or who causes to be placed, deposited, or dumped, or who causes or allows to overflow, sewage, sludge, cesspool or septic tank effluent, accumulation of human excreta, or solid waste, in or upon a street, alley, public highway, or road in common use or upon a public park or other public property other than property designated or set aside for that purpose by the governing board or body having charge of the property, or upon private property without the owner's consent, is guilty of a misdemeanor.)

Public Works was called to the scene that night and took steps to mitigate any potential contamination (the property owner will be billed for Public Works time for the clean-up). Planning Director Caldwell notified the regional Water Quality Control Board on the following Monday, as well as the property owner. The motor home was moved from the property the following Tuesday. Because the motor home has moved there is no need to abate the motor home from the property.

The case will be forwarded to the Humboldt County District Attorney's Office for prosecution. The case will be reviewed by that agency and either they will prosecute the case or not prosecute the case. The crime the individual was cited for is a misdemeanor and a fine and/or up to one year in jail. Staff has called into the DA's Office to get a more specific information on what a likely outcome might be.

#### Public Works Review of Black-Water Discharge

Two members of public works staff were called out on Saturday July 26 shortly after 11:00pm after receiving a call from the police department. Staff responded immediately with a 200 gallon water tank with a mixture of bleach and water for disinfection. This approach is standard practice according to the city's sewer overflow plan, and is regularly used when similar incidents occur, which according to staff is seldom. The City's crew began to immediately treat the public space (street and sidewalk area) using a power washer, flushing any remaining residue towards a nearby storm drain. Staff estimates the use of a half of the tank to complete the procedure. Staff also noted that the discharge appeared to have occurred on private property, with minimal runoff into the public space of the sidewalk and street. The Amount of time between arrival on scene and departure from the scene is estimated at 45 minutes.

#### Additional Information

City staff has also referred this matter on for investigation and action to the Humboldt County Environmental Health Division and the North Coast Regional Water Quality Control Board.

*Rio Dell City hall  
675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532  
riodellcity.com*



August 5, 2014

TO: Rio Dell City Council

FROM: Kyle Knopp, City Manager

A handwritten signature in blue ink, appearing to be "K. Knopp", written over the name "Kyle Knopp, City Manager".

SUBJECT: Discussion and Possible Action on Draft Report Produced for the Humboldt Bay Municipal Water District Relating to a Reconnaissance-Level Pipeline Route Study.

IT IS RECOMMENDED THAT THE CITY COUNCIL:

Discuss the attached report and provide direction for further action on this matter.

BACKGROUND AND DISCUSSION

The Humboldt Bay Municipal Water District has begun a search for alternative customers for raw industrial water that is no longer in use following the closure of the Samoa Pulp Mills near Eureka. The Amount of this water right is some 60 million gallons per day. The District's right to this water may be in jeopardy by 2029 when a permit renewal process will look at utilization of the water.

The report proposes a number of piping routes to best utilize this water both inside of Humboldt County and as an export outside of the County's boundaries.





# **Humboldt Bay Municipal Water District**

## **Water Resource Planning Pipeline Routes Reconnaissance-Level Pipeline Study**

**May 2014**

document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION



# Executive summary

As part of the Humboldt Bay Municipal Water District's (HBMWD or District) Water Resource Planning efforts, GHD has been engaged to undertake a reconnaissance-level assessment for feasible pipeline routes to transfer excess HBMWD water to potential customers to the south or east of their Essex Diversion Facility. The District has a Water Right to 75 million gallons per day (MGD), which has historically included 60 MGD of industrial or unfiltered and untreated surface water from the Mad River, diverted at their Pump Station 6, Surface Water Diversion Station at Essex, near Arcata, CA. This water was previously provided to and utilized at the pulp mills on the Samoa Peninsula in their industrial processes. The first mill closed in 1994-95, and the second mill closed in 2010-11. The closure of the mills had a large financial impact on the District's operations. The District's right to this water is also in jeopardy when it comes up for permit renewal in 2029 if the water is not utilized. With the closure of the mills, loss of associated water sales revenue, and possible jeopardization of the Water Right, HBMWD has begun to look for alternative customers or uses for this water.

The purpose of this report is to present a number of potential pipeline routes for transferring HBMWD water to potential customers and determine whether the construction and operation and maintenance costs associated with these pipelines would yield "acceptable" water rates for the customers and the District. The report presents seven potential pipeline routes to transfer HBMWD water to potential customers to the north, south or east of the Essex Diversion Facility. Two of the seven alignments (an eastern route to the State Water Project and a Southern route following Kneeland and Alderpoint Roads to Lake Mendocino) were selected by the Board for further investigation and assessment. A potential add-on to the southern alignment to divert water to the Van Arsdale Reservoir/Potter Valley Diversion was also analyzed. WaterCAD models were developed for each alignment for both a 24-inch (10 MGD) and 36-inch (20 MGD) diameter pipe. Costs associated with design, permitting, land/ROW acquisition, and construction were then estimated for each alignment and pipe diameter. The estimated construction costs were then amortized over a 50 year period, assuming a bond rate of 5.5%, and converted in a cost per acre-foot of water. To this cost was added the estimated Operation and Maintenance Costs and the District's availability fee, and these costs were divided by the rate of water delivery to obtain a cost per acre-foot. The estimated construct costs and per acre-foot cost are summarized in the following Tables.

**Table 1: Amortized<sup>1</sup> total cost per acre-foot**

Item	East Route 24-inch	East Route 36-inch	South Route 24-inch	South Route 36-inch	Van Arsdale Extension 24-inch	Van Arsdale Extension 36-inch
Construction Cost/Acre-ft	\$1,092	\$811	\$1,721	\$1,312	\$226	\$181
O&M Cost/Acre-ft	\$1,015	\$1,015	\$1,149	\$1,149	\$ 46	\$ 46
District Fee/Acre-ft	\$200	\$200	\$200	\$200	\$200	\$200
<b>Total Cost/Acre-ft</b>	<b>\$2,306</b>	<b>\$2,025</b>	<b>\$3,070</b>	<b>\$2,661</b>	<b>\$472</b>	<b>\$427</b>

As part of this investigation, GHD also contacted a number of regulatory and permitting agencies, Southern Humboldt County communities, and other stakeholders to gather information on the anticipated regulatory constraints, as well as the interest in the District's water by Southern Humboldt Communities. In general, stakeholders were receptive to the project, but most regulatory and permitting agencies were very reluctant to commit to any definitive comments prior to the completion of permit applications or CEQA documents. Extensive additional consultation would still need to occur with these agencies, as well as the Tribes and other concerned Stakeholders if the project moves forward. The only southern Humboldt Community to definitively state that there were interested in the water was the City of Rio Dell. Other communities generally stated that they currently have sufficient water or would need to review the economics in depth before they would consider it.

As shown in Table 1, the cost varies from approximately \$2,000 to \$3,000/acre-foot, with the lowest cost being for the 36-inch pipeline along the eastern alignment, and the highest cost being for the 24-inch pipeline along the southern alignment. The larger 36-inch pipeline is the more cost effective option for each of the alignments and if a further assessment of these alternatives is pursued, an option to provide 40 MGD (48-inch diameter pipe) should be considered.

The \$2,000-\$3,000/acre-foot are of course considerable higher than what the District has historically been paid for their industrial water. It is also considerably higher than what is currently being charge for domestic water in Sonoma and Mendocino Counties (approximately \$100 to \$1,500/acre-foot). There is also a current proposal to raise the height of the dam at Lake Mendocino to provide extra water to some of the entities in Sonoma and Mendocino Counties. The estimated construction costs for that project are \$250 - \$300 million, and this additional source of water would be in direct competition to some of the potential users of the District's excess water.

However, the \$2,000-\$3,000/acre-foot costs are comparable to desalinization costs, which are often cited as the potential source for additional water along the California coast. The 'generic' cost figures of \$2,500 to \$3,500 per acre-foot are routinely quotes as the cost of desalinization; however, an estimate in excess of \$10,000 per acre-foot on a project currently under study is public knowledge. One of the other significant factors that may make transportation a more favorable option than desalinization is the reduced capital cost requirements. For example, RBF Consulting recently completed a Technical Memorandum dated October 5, 2011 and titled "Cost Analysis of Water Supply Alternatives". The Memorandum looked at the cost for several alternatives to "solve

<sup>1</sup> A bond rate of 5.5% was assumed over a 50-year amortization period.

the water supply deficit in CAW's Coastal Division" (i.e. the area in and around Monterey/Carmel). Capital costs ranged from \$362M for the proposed 10 MGD Monterey Desalination project to \$583M for a Deep Water Desalination plant at Moss Landing, considerably more than the anticipated costs for the pipeline project. The ongoing operations and maintenance costs for a desalinization plant would also be quite high, estimated to be \$13.2M/year by RBF for the Monterey Desalination project. Although operation costs for the pipeline option are not insignificant, and maintenance would be required on the pipeline and pumping facilities, the operation and maintenance costs for the pipeline are anticipated to be considerably less than a desal plant. Although a life cycle cost analysis is beyond the scope of this report, it is likely that a life cycle cost comparison of the pipeline vs. desalinization would be very favorably weighted toward the pipeline option.

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## Appendices

### Appendix A –Cost Estimating Spreadsheets

# 1. Introduction

As part of the Humboldt Bay Municipal Water District's (HBMWD or District) water resource planning efforts, GHD has been engaged to undertake a reconnaissance-level assessment for feasible pipeline routes to transfer excess HBMWD water to potential customers to the south or east of their Essex Diversion Facility.

## 1.1 Background

The District has a Water Right to 75 million gallons per day (MGD), of which historically has included 60 MGD of industrial or unfiltered and untreated surface water from the Mad River, diverted at its Pump Station 6, Surface Water Diversion Station at Essex, near Arcata, CA. This water was previously provided to, and utilized at, the pulp mills on the Samoa Peninsula in their industrial processes. The first mill closed in 1994-95, and the second mill closed in 2010-11. The loss of the mills has had a large financial impact on the District's operations, and the District was forced to pass operational costs that were previously covered by the mills on to the rate payers who purchase treated or domestic water. The District's right to this water is also in jeopardy when it comes up for permit renewal in 2029 if the water is not utilized. With the closure of the mills, loss of associated water sales revenue, and possible jeopardization of the water right, HBMWD has begun to look for alternative customers or uses for this water.

A Water Resource Planning Committee (Committee) was established by the District to research potential uses for this surplus water. Options identified generally fell into three broad categories, including:

1. Local Water Use;
2. Transfer to another Public Agency; and
3. Instream Flow Dedication.

The Committee produced a report outlining these options, and District Board Members and staff began discussions with potential water users in the Bay Area and farther south about the availability of the District's water. Subsequent investigations of the cost for barging the water south indicated that this method would not be cost-competitive when compared to other water sources, including desalinization. The instream dedication and other local use alternatives continue to be pursued, but to aid the Committee, the District Board has also engaged GHD to assist them in conducting this Pipeline Reconnaissance Study to explore the feasibility and associated cost for transferring the water east or south to potential customers via a pipeline.

The Water Resource Planning Committee had several desired outcomes for any water leaving the area, including the preference of transferring the water to another public agency. As part of this investigation, the Water Resource Planning Committee and GHD contacted a number of public agencies to assess their level of interest in potentially utilizing the District's excess water. This Study does not detail these conversations, which are addressed in other reports from the Committee. However, the Study does detail conversations with local (Humboldt County) public agencies that were contacted with respect to their interest in use of available water. The Study also details conversations that were conducted with various regulatory agencies and other stakeholders with respect to the feasibility and requirements of the project.



## **1.2 Purpose of this Study**

The purpose of this Study is to develop and present alternative feasible pipeline routes to transfer HBMWD water to potential customers to the south or east of the Essex Diversion Facility. This Study also presents WaterCAD model results and estimated design, permitting, and construction as well as operation and maintenance costs for the two options preferred by the HBMWD Board. It also presents the results of discussions with relevant stakeholders. It then develops a per acre-foot cost estimate for the delivery of water to allow the District and potential users to determine if the pipeline alternatives are cost-effective.

## **1.3 Scope**

The scope of services in this project includes the tasks outlined in the November 12, 2013 letter to Carol Rische, HBMWD General Manager. As detailed in this letter, the scope of this project was to;

- Undertake a reconnaissance-level pipeline study, including the identification and review of alternative pipeline alignments
- Refine the District's two preferred alignments
- Consult with relevant stakeholders and potential purchasers of the District's water
- Develop WaterCAD models for 24- and 36-inch diameter pipelines along the two preferred alignments
- Develop a Class 4 Opinion of Probable Construction Cost estimate for 24- and 36-inch diameter pipelines along the two preferred alignments
- Estimate a cost per acre-foot for water for 24- and 36-inch diameter pipelines delivered through the two preferred alignments.

### **1.3.1 Limitations**

The pipeline design detailed in this document should be considered a reconnaissance-level (10%) design. The design was focused on potential alignments and the feasibility of these alignments with respect to topographic relief, relatively stable geology, potential for acquiring right-of-way (ROW), limited river crossings, etc. A WaterCAD model was developed sufficient to size pump stations and determine pipeline pressures, but detailed design of the pipeline and pump stations was not performed. The design was progressed to a sufficient level to prepare a Class 4 Cost Estimate.

The Cost Estimate is considered to be an Association for Advancement of Cost Engineering (AACE) Class 4 Cost Estimate. AACE defines a Class 4 Cost Estimate as: "Class 4 estimates are generally based on limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically, engineering is from 1 to 15% complete, and would comprise at a minimum the following: Plant capacity, block schematics, indicated layout, process flow diagrams for main process systems, and preliminary engineered process and utility equipment lists. Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side and +20% to +50% on the high side."

Costs were developed in 2014 dollars and no consideration has been included for the time it will take to permit and construct any of the alternatives analyzed, and the subsequent inflationary pressure on the costs.

GHD has prepared the reconnaissance-level cost estimate using information reasonably available to GHD and based on assumptions and judgments made by GHD as detailed in the applicable sections of this report. Actual prices, costs and other variables may be different than those used to prepare the Cost Estimate and may change. Unless otherwise specified in this report, no detailed quotation has been obtained for actions identified in this report. GHD does not represent, warrant or guarantee that the project can or will be undertaken at a cost which is the same or less than the Cost Estimate.

Field work to truth data, performance of geotechnical assessments, survey or right-of-way acquisition work, topographic surveys, California Environmental Quality Act (CEQA) investigations, or any permitting activities with any regulatory agencies were not included as part of this scope of work.

This report presents the results of a reconnaissance-level engineering assessment and does not include detailed design, permitting, right-of-way, water rights, public opinion, or governmental/administrative considerations.

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## 2. Reconnaissance-Level Pipeline Study

### 2.1 Identification and Review of Alternative Pipeline Alignments

GHD undertook an evaluation of potential pipeline routes for 24- and 36-inch-diameter pipeline from the HBMWD industrial system, beginning near Essex and running to the south or east. The intent is to allow the existing water to continue to flow down the Mad River as is currently done and divert it at the Essex Facilities using the existing surface water intake structures. New piping would then begin near the existing Essex Facility and proceed to the point of use. The District Board and Water Resource Planning Committee was not interested in evaluating diversion from the Mad River at any other point in the system, and controlled diversions are not currently available at any other point in the system.

As mentioned, approximately 60 MGD of excess surface water is available for use; however, the District was only interested in the potential diversion of up to 40 MGD for use outside of the immediate area. A 24-inch pipeline would convey approximately 10 MGD and a 36-inch pipeline would convey approximately 20 MGD. It is potentially feasible to divert more than the quantities evaluated in this report, up to 40 MGD, and larger sized pipelines should perhaps be evaluated if future studies are conducted.

An initial screening was performed to determine general alignments that could be further assessed. The general alignments to be investigated include:

- South to Mendocino/Sonoma Counties
- East to the South Fork of the Trinity River
- East into the Federal or State Water Projects
- North to the Klamath or Trinity River drainages

Alignments south were reviewed with the goal of delivering water to communities in Southern Humboldt, Mendocino and Sonoma counties. Alignments to the east were reviewed with the goal of providing water to augment the flows in the Trinity River and potentially offset diversions to the Federal Water Project from Trinity Lake or to directly discharge into Trinity Lake for use in the Federal Water Project, or to discharge into the Sacramento River or other portions of the State Water Project. Alignments to the North were reviewed with the goal of discharging into the Trinity/Klamath system to improve water quality and off-set upstream diversions.

### 2.2 Alternative Alignment Study

A detailed paper and GIS analysis were performed to layout potential alignments. Three main alignments were developed to the south, one main alignment was developed to the east with a branch off to the north to Trinity Lake, and one main alignment was developed to the north/north-east to the Klamath/Trinity River Systems. These alignments are shown on Figure 1.





### 2.2.1 Methodology

A desktop analysis was conducted to determine feasible alignments using paper USGS Quad maps as well as GIS. Potential alignments were reviewed taking into account the following factors listed in their general level of priority:

- Topographic relief
- Geological stability
- Public or utility right-of-way availability including roadways
- Potential water demand of the customers along the route
- Environmental impacts (qualitative assessment only, e.g. this alignment crosses 20 salmonid bearing streams, each of which will require a Dept. of Fish & Wildlife 1600 permit)
- Potential general impacts to cities, roads, railways, other major utilities
- Other constructability impacts, including proximity to electrical service for pump stations and access roads for future operation and maintenance

### 2.2.2 Southern Routes

Three general alignments to the south were reviewed: one following Highway 101, one following the North Coast Railroad alignment, and one following ridgelines and a network of roads located further inland. These alignments are shown on Figure 1 and are generally described below.

#### Highway 101 Right-of-Way to Lake Mendocino

This alignment follows the North Coast Railroad alignment from the Essex facility towards the west until it intersects Highway 101. It then follows the Highway 101 alignment south. The pipeline would be installed in the highway median where available or off to the east or west of the highway depending on the topography. It is understood that the California Department of Transportation (CalTrans) generally does not allow parallel easements within their right-of-way and there are sections of this alignment, for example through Humboldt Redwoods State Park, where there would be no room for a pipeline either side of the highway and it would have to be installed within the road prism. South of Garberville at Confusion Hill, where the highway crosses the Eel River on the Confusion Hill Bridge, the existing canyon is very narrow and unstable and there is no room for a pipeline except hanging it from the Confusion Hill Bridge and placing it within the road prism. Given the frequent landslides in this area and the requirement to repair the existing roadway, it is highly unlikely that CalTrans would allow the installation of the pipeline through this section of Highway 101 and the evaluation of this alignment was terminated at this point.

#### North Coast Railroad Right-of-Way to Lake Mendocino

This alignment would follow the North Coast Railroad alignment from Essex for approximately 180 miles south and would terminate in Mendocino County at the Van Arsdale Reservoir (Potter Valley Diversion on the Eel River) or Lake Mendocino, and water could be delivered to the Sonoma County Water Agency (SCWA), various Mendocino County Water Agencies and communities in Southern Humboldt County.

The advantages of this alignment include:

- Access to Southern Humboldt County communities down to Alderpoint and Garberville
- Access to SCWA and the communities they feed with their system
- Access to Mendocino communities, including Laytonville, Willits, and Ukiah, as well as other water agencies that access Eel River, Lake Mendocino and Van Arsdale water

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- North Coast Railroad Authority would very likely allow use of their right-of-way
- Possible water quality benefits to Eel River depending on final operation

The additional constraints for this alignment include:

- Most unreliable of all routes due to unstable geology along large portion of route, particularly in Eel River canyon between Dyerville and Covelo
- Very difficult to access central Eel River Valley for maintenance activities
- Increased maintenance costs due to likely increased failures
- May need to provide additional storage to allow balanced delivery to Lake Mendocino to optimize SCWA usage
- Longer than eastern routes, so more expensive to design and construct

#### **West End Rd to Kneeland Rd to Alderpoint Road to Bell Springs Rd to Railroad to Lake Mendocino**

This alignment extends from Essex south along West End Road, and then follows an electric transmission alignment up a ridge to Fickle Hill Road, then southerly along Fickle Hill Road to Kneeland Road, and southerly along Kneeland Road to a crossing of the Van Duzen River near Bridgeville. It would then follow Alderpoint Road southerly to a crossing of the Eel River near Fort Seward and then could either follow the Coonly/Alderpoint Road south-easterly to the ridge of New Harris above Garberville and its intersection with Bell Springs Road, or alternatively leave the river crossing at Fort Seward and traverse uphill westerly to Fruitland Road and thence southerly along Fruitland Road to New Harris and Bell Springs Road. The alignment would then follow Bell Springs Road to where it intersects with Highway 101. It would then through Long Valley past Laytonville, with an alternative route following Sherwood Road to bypass Long Valley. The alignment then intersects North Coast Railroad alignment just north of Willits and would follow the railroad right-of-way south to Lake Mendocino with an alternate branch off to Van Arsdale Reservoir.

The advantages of this alignment include:

- Fairly straight-forward routing with existing road access
- Access to Southern Humboldt communities, including Bridgeville, Alderpoint and Garberville
- Access to SCWA and the communities they feed with their system
- Access to Mendocino communities including Laytonville, Willits, and Ukiah as well as other water agencies that access Eel River, Russian River, Lake Mendocino and Van Arsdale water
- Utilizes existing NCRA ROW on the southern end with their support
- Can also access Van Arsdale Reservoir/Potter Valley
- Possible benefits to the Eel River depending on final operation

The additional constraints for this alignment include:

- May need to provide additional storage to allow balanced delivery to Lake Mendocino to optimize SCWA usage
- Longer than eastern routes, so more expensive to design and construct

### **2.2.3 Eastern Routes**

#### **Southfork Mt. & Hwy 36 to Platina and into State Water Project**

This alignment heads southeast from the Essex facilities along West End Road. The City of

Eureka's old water main extends along this alignment and it may be possible to utilize that existing

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right-of-way for the proposed piping. It would follow that alignment to the Mad River Hatchery, cross the Mad River, and then traverse uphill and easterly to an interception with Snow Camp Road, following this road southerly past Snow Camp and existing roadway to Board Camp, then following existing Forest Service and logging company roads through Six Rivers National Forest heading to Pilot Ridge and South Fork Mountain Ridge. Once it gets to South Fork Mountain ridge, a spur could be directed to the South Fork of the Trinity River to supplement flows to the South Fork and main stem of the Trinity and the lower portion of the Klamath. The main pipeline route would follow South Fork Mountain ridge out to State Highway 36, where it would intersect with the PG&E natural gas right-of-way that generally follows the Highway 36 alignment to the east out to Platina in Shasta County, which is out of the Trinity Mountains and into the Central Valley. From Platina, it may be possible to discharge into Cottonwood Creek, which flows to the Sacramento River, or hard pipe it approximately another 30 miles to the Sacramento River, where it would be available for the State Water Project.

The advantages of this alignment include:

- Access to State Water Project, which provides access to Bay Area agencies (who are working together regionally and have ability to transfer or exchange water among themselves)
- Access to Sacramento-area agencies
- Given size of State Project, not as much need to “balance” water delivery or find storage
- Fairly straightforward routing with existing PG&E ROW to utilize

The additional constraints for this alignment include:

- Possibly a lot of parties to negotiate with
- Need to determine terminus for delivery (stream, Sacramento River or other SWP facility). Stream would provide for shortest route but it is unclear if regulatory agencies will allow Mad River water into such streams

### **Southfork Mt to Hwy 36 to Clair Engle Reservoir**

The first portion of this alignment matches the previous route to Platina and the State Water Project. At approximately the Trinity/Shasta County border, the alignment would then turn towards the northeast following the ridge lines and Browns Creek/Deer Lick Springs roads to the Chancelulla and Hayfork Divides out to State Highway 3 and follow that out to Highway 299 near Douglas City. It would then continue north along Highway 299/Highway 3 to Trinity Dam Boulevard and down into Clair Engle Lake, where it enters into the Federal Water Project.

The advantages of this alignment include:

- Access to the Federal Water Project with access to numerous agencies and agriculture users
- Clair Engle/Trinity Lake can act as storage, reducing need to “balance” water delivery or find storage

The additional constraints for this alignment include:

- Federal project would likely be more difficult to negotiate with Bureau and end-users.
- Likely more local community concern and opposition
- Route off of Hwy 36 to Clair Engle will be difficult/expensive

## **2.2.4 Northern Routes**

### **Trinity River at Hoopa or Klamath River downstream of Weitchpec**

This alignment would begin the same as the eastern alignments and follow the old City of Eureka pipeline alignment along West End Road to the Mad River Hatchery. The alignment then crosses the Mad River and continues to the Northeast following Korb, Maple Creek, and K&K Roads and then logging roads over Lord Ellis Summit. It then crosses Highway 299 and continues on Bair Road out along Redwood Creek. It continues along Bair Road out to Pine Ridge. The route to the Trinity River then crosses into the Hoopa Valley Indian Reservation, continuing on Bair Road to the Trinity River near Hoopa. The Klamath River alignment would head north where Bair Road crosses Pine Ridge and follow Pine Ridge north, past Hupa Mountain to French Camp and then follows French Camp Ridge until it turns east to Martin's Ferry and the Klamath River.

The advantages of this alignment(s) include:

- Flow augmentation to Lower Klamath/Trinity with possible environmental benefits
- Upper Klamath Basin users may pay for water
- Shorter pipeline than other options

The additional constraints for this alignment(s) include:

- Likely difficult to find someone to pay for the water
- Not sure regulatory agencies will allow Mad River water into the Trinity/Klamath
- Lower part of Klamath not where water is needed other than for environmental enhancement
- Need to get Tribal approval for route

## **2.3 Selection of Final Alignments for Additional Study**

The alignments outlined above were reviewed with District Staff and the Water Resource Committee Members as well as the entire District Board to obtain feedback and ultimately select the final alignment to review in greater detail and develop estimates of probable construction cost for. Along with the technical constraints, some of the other points of discussion are summarized below.

### **2.3.1 Local Usage**

It is the preference of the HBMWD Board to use the water "locally" within Humboldt County, if possible. Some of the other potential users contacted in Mendocino County also expressed their desire to have Southern Humboldt Communities as part of the stakeholders in this process, to help ensure that there would be additional local support for the project, and it would not be seen as only a transport out of Humboldt County. As part of this assessment, the following communities were contacted as potential users:

- Fortuna
- Rio Dell
- Scotia
- Myers Flat
- Miranda
- Redway
- Garberville

Rio Dell expressed interest in access to the water to supplement their reliance on water from the Eel River or South Fork Eel River in dry years. None of the other communities would make a

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commitment to utilize the water if a pipeline was installed; however many of them rely on the Eel River currently and reduced flows due to drought conditions may necessitate reviews for additional water resources.

HBMWD's Policy Statement on the ultimate use of District water suggests that the use of water by any purchaser (i.e. public agency) who primarily needs water for growth and development would be adverse to the District's desired use. Therefore, it is desirable for this water to be used in some form by replacing existing sources including flows previously diverted from other natural systems (e.g. the Eel River).

### **2.3.2 Preference for Location of Use**

The HBMWD Board has a preference to see the water used in Mendocino and Sonoma Counties above diverting flows into the State or Federal Water Systems. HBMWD has long had a relationship with the Sonoma County Water Agency (SCWA) and has partnered with them and shared information on items such as upgrades to their Ranney type Collector Wells. This long-term relationship would facilitate discussions and negotiations on potential water delivery to SCWA. The view of Mendocino and Sonoma Counties as part of the North Coast "community" also makes delivery to them a preference and potentially a direct benefit to communities in southern Humboldt County. In addition to constructing the pipeline in closer proximity to Southern Humboldt communities, there are potentially other advantages. An example of additional potential benefits would be to utilize the water to offset the diversion from the Eel River at Van Arsdale (the Potter Valley Diversion). The offset of this diversion would have a direct benefit to Eel River flows and the communities in Humboldt County that depend on the Eel River as a water source. Of course this offset would also result in the loss of power generated by PG&E (approximately 6 to 9 megawatts) produced at the Potter Valley Diversion. As part of this Report, contact was made with PG&E to discuss this alternative (See Section 3 of this Report).

### **2.3.3 Selection of Final Alignments**

GHD presented a comparative table outlining the key features of the seven alignments at the Special Board meeting in March 2014 (Table 2). The advantages and constraints of the various alignments were discussed. It is important to note that the information provided did not take into consideration any of the "political" constraints or issues that could be associated within each alignment. The Board discussed the seven potential routes.

Although the three northern alignments would be the shortest alignments to build (between 35-50 miles), the majority of the Board disliked these, as they would benefit another watershed, rather than the Mad River. It was also discussed that these alignments might make it easier for the Central Valley Project to avoid relinquishing 50,000 Acre Feet of water from the Trinity System that was contracted to Humboldt County, which has been a point of contention for years.

Of the two eastern alignments, the Board preferred the alignment terminating at the State Water Project at Platina (see Figure 2). The alignment terminating into Trinity Lake, which is part of the Federal Water Project, was not selected for further investigation. The Board agreed that this should be avoided because of the contractual obligations that would come from a municipality trying to do business with the federal government. The Board felt that it would be much easier to negotiate with the State Water Project.

Of the two southern alignments, the Board preferred the alignment that follows Kneeland, Alderpoint and Bell Springs Roads to the railway right of way to Van Arsdale or Lake Mendocino (see Figure 3). This route can use the existing roads for easement and maintenance access and is

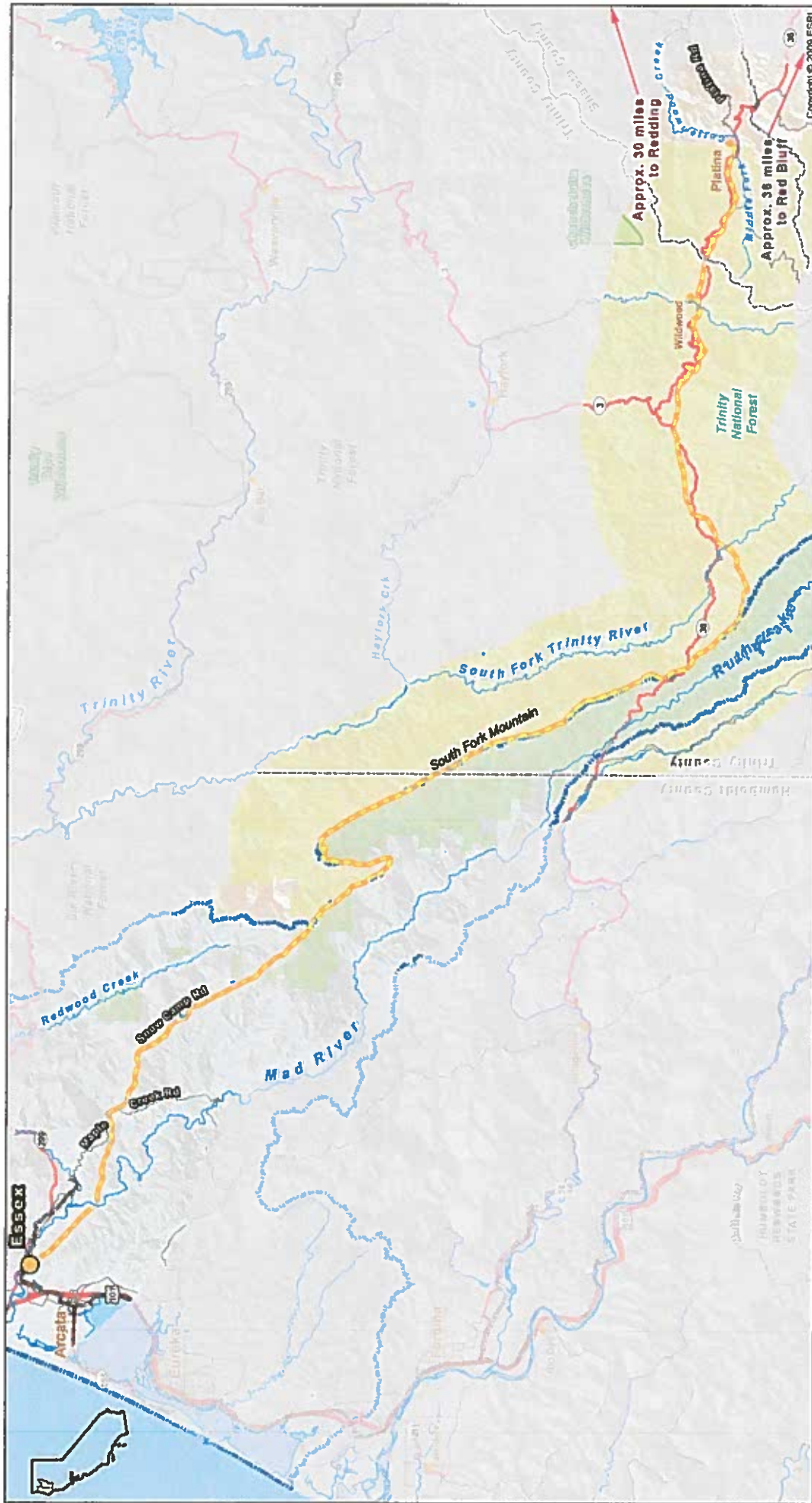
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more geologically stable. There is no access to Fortuna or Rio Dell/Scotia, but other communities in Southern Humboldt and Northern Mendocino could be accommodated. The route along Highway 101 was deemed to be inappropriate as it would be highly unlikely that Caltrans would issue a longitudinal easement for the pipe installation. The alignment following the railroad ROW along the entire length was considered to be impractical due to the geological instability and limited maintenance access.

Following some discussion, the Board agreed that the Eastern route to the State Water Project and the Southern route following Alderpoint Road be investigated for further assessment and development of design, permitting and construction costs.

Board members sought to clarify that the purpose of the project for the District is to better understand if these routes are feasible and an estimate of the construction and operation and maintenance costs. The Board is not yet at a decision making point regarding whether the pipeline would be further pursued.

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Humboldt Bay Municipal Water District  
 Pipeline Reconnaissance Study  
 Job Number 8410954  
 Revision A  
 Date 23 May 2014



Essex to Platina  
 West to East Pipeline Alignment  
 Figure 2

710 Third Street Eureka CA 95501 USA T 707 443 8328 F 707 444 8330 E kunda@ghd.com W www.ghd.com

- |  |   |   |   |
|--|---|---|---|
| <b>West/East Alignment</b><br>Essex to Platina - West<br>to East Alignment<br>Railroad | <b>Highway; Freeway</b><br><b>Major Road</b><br><b>Rivers</b><br><b>Lakes</b> | <b>Wilderness Area</b><br><b>State Parks</b><br><b>National Forests</b> | <b>Mad River-Redwood<br/>Creek Watershed</b><br><b>Indian Trust Lands</b><br><b>County Boundary</b> |
|--|---|---|---|



Paper Size 11" x 17" (ANSI B)  
 Map Projection: Transverse Mercator  
 Horizontal Datum: NAD 83  
 Vertical Datum: NAVD 83  
 Contour Interval: 20 ft

ESSEX TO PLATINA - WEST TO EAST PIPELINE ALIGNMENT, 19117 JUNE  
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#### North/South Alignment

North/South Pipeline Alignment (165 Miles)

Alternate - Van Arsdale Reservoir (19 miles)

Highway; Freeway

Major Road

Railroad

Rivers

Lakes

Wilderness Area

State Parks

National Forests

Mad River-Redwood Creek Watershed

Indian Trust Lands

County Boundary

Paper Size 11" x 17" (ANSI)

0 5 10 15 20 Miles

Map Projection: Transverse Mercator  
Horizontal Datum: North American 1983  
Grid: NAD 1983 UTM Zone 10N



Humboldt Bay Municipal Water District  
Pipeline Reconnaissance Study

Job Number 8410954  
Revision A  
Date 23 May 2014

North/South Pipeline Alignment Figure 3

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718 Third Street Eureka CA 95501 USA T 707 443 8320 F 707 444 8330 E eureka@ghd.com W www.ghd.com

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**Table 2: Pipeline routing comparisons**

Alignment	Terminus	Approximate Mileage (from Essex to End User)	Advantages	Constraints <sup>1</sup>
<b>North or North-East to Klamath/Trinity River Systems</b>				
To Klamath River downstream of Weitchpec	Lower Klamath River	50	<ul style="list-style-type: none"> <li>Flow augmentation to Lower Klamath with possible environmental benefits</li> <li>Upper Klamath Basin users may pay for water</li> </ul>	<ul style="list-style-type: none"> <li>Likely difficult to find someone to pay for the water</li> <li>Not sure regulatory agencies will allow Mad water into the Klamath</li> <li>Lower part of Klamath not where water is needed other than for environmental enhancement</li> </ul>
To Trinity River just upstream of Hoopa	Mainstem of Trinity and Klamath below Weitchpec	35	<ul style="list-style-type: none"> <li>Flow augmentation to Trinity &amp; Klamath with possible environmental benefits</li> <li>Upper Klamath Basin users may pay for water</li> <li>Shorter pipeline than other option and Trinity &amp; Klamath Rivers get benefit</li> </ul>	<ul style="list-style-type: none"> <li>Likely difficult to find someone to pay for the water</li> <li>Not sure regulatory agencies will allow Mad water into the Trinity/Klamath</li> <li>Need to get Tribal approval for route</li> </ul>
Southfork Mt. to Mill Creek to South Fork of the Trinity	South Fork & Mainstem of Trinity River & Lower Klamath	40	<ul style="list-style-type: none"> <li>Flow augmentation to South Fork &amp; mainstem Trinity and lower Klamath with possible environmental benefit</li> <li>Could be part of pipeline route that continues to the east, and serves as place to discharge excess water</li> </ul>	<ul style="list-style-type: none"> <li>Likely difficult to find someone to pay for the water</li> <li>Not sure regulatory agencies will allow Mad water into the Trinity/Klamath</li> </ul>

<sup>1</sup> Note that all alignments have similar constraints of extensive permitting requirements/costs, high construction costs, long lead time for planning/permitting/construction, etc.

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Alignment	Terminus	Approximate Mileage (from Essex to End User)	Advantages	Constraints <sup>1</sup>
<b>Eastern Routes</b>				
Southfork Mt. & Hwy 36 to Platina and into State Water Project	State Water Project	90	<ul style="list-style-type: none"> <li>Access to State Water Project which provides access to Bay Area agencies (who are working together regionally and have ability to transfer or exchange water among themselves)</li> <li>Possible access to Sacramento-area agencies</li> <li>Given size of State Project, not as much need to "balance" water delivery or find storage</li> <li>Fairly straightforward routing with existing PG&amp;E ROW to utilize</li> </ul>	<ul style="list-style-type: none"> <li>Possibly a lot of parties to negotiate with</li> <li>Need to determine terminus for delivery (stream, Sacramento River or other SWP facility). Stream would provide for shortest route but not sure if regulatory agencies will allow Mad water into such stream</li> </ul>
Southfork Mt. to Hwy 36 to Clair Engle Reservoir	Federal Water Project	125	<ul style="list-style-type: none"> <li>Access to the Federal Water Project with access to numerous agencies and agriculture users</li> <li>Clair Engle/Trinity Lake can act as storage, reducing need to "balance" water delivery or find storage</li> </ul>	<ul style="list-style-type: none"> <li>Federal project would likely be more difficult to negotiate with Bureau and end-users.</li> <li>Likely more community concern and opposition</li> <li>Route off of Hwy 36 to Clair Engle will be difficult/expensive</li> </ul>

<sup>1</sup> Note that all alignments have similar constraints of extensive permitting requirements/costs, high construction costs, long lead time for planning/permitting/construction, etc.

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Alignment	Terminus	Approximate Mileage (from Essex to End User)	Advantages	Constraints <sup>1</sup>
<b>Southern Routes</b>				
North Coast Railroad Right-of-Way to Lake Mendocino	Sonoma CWA, Mendocino Co. Water Agencies, and So. Humboldt Co.	180	<ul style="list-style-type: none"> <li>Access to So. Humboldt communities down to Phillipsville</li> <li>North Coast Railroad Authority would happily allow use of ROW</li> <li>Can also access Van Arsdale Reservoir/Potter Valley</li> <li>Possible benefits to Eel River depending on final operation</li> </ul>	<ul style="list-style-type: none"> <li>Most unreliable of all routes due to unstable geology along large portion of route</li> <li>Very difficult to access central Eel River Valley</li> <li>Increased maintenance costs</li> <li>May need to provide additional storage to allow balanced delivery</li> <li>Longer than eastern routes so more expensive to design and construct</li> <li>Fewer large potential customers</li> </ul>
Westend Rd to Kneeland Rd to Alderpoint Rd to Bell Springs Rd to Railroad to Lake Mendocino (or Van Arsdale/Potter Valley)	Sonoma CWA, Mendocino Co. Water Agencies, and So. Humboldt Co.	170	<ul style="list-style-type: none"> <li>Fairly straight forward routing with existing road access</li> <li>Access to So. Humboldt communities</li> <li>Utilize existing NCRA ROW on the southern end with their support</li> <li>Possible benefits to Eel River depending on final operation</li> </ul>	<ul style="list-style-type: none"> <li>May need to provide additional storage to allow balanced delivery</li> <li>Longer than eastern routes so more expensive to design and construct</li> <li>Fewer large potential customers</li> </ul>

<sup>1</sup> Note that all alignments have similar constraints of extensive permitting requirements/costs, high construction costs, long lead time for planning/permitting/construction, etc.

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## 3. Stakeholder Consultation

Limited stakeholder consultation was conducted with various regulatory and private entities to discuss aspects of potential alignments and the potential for regulatory acceptance of the project. The sections below list agencies that were contacted and provide a summary of the conversations.

### 3.1 PG&E

#### 3.1.1 Contacts

- Ernie Ralston, Corporate Environmental Planner; 415-973-3215, [EER2@pge.com](mailto:EER2@pge.com)
- Alison Talbott, Local Public Relations, 707-443-3355, [Alison.talbott@pge.com](mailto:Alison.talbott@pge.com)

#### 3.1.2 Call History

- Exchanged email with Ernie Ralston on Jan. 3, 2014. Ernie provided additional contact information for Neva Geldard to discuss the Potter Valley project 707-223-3076, [NMK2@pge.com](mailto:NMK2@pge.com)
- Neva Geldard contacted by telephone on 1/22/14. Voicemail not returned.

#### 3.1.3 Summary of Discussion

When asked if PG&E would be amenable to HBMWD using their power line right-of-way or access road easements, Mr. Ralston stated that PG&E's electric and gas transmission easement rights are specific to the transport of electricity or natural gas and do not include the right to install water pipes. Should there be desire to obtain a separate easement overlapping a PG&E easement, PG&E could work with the District on separation requirements and cathodic protection needs.

### 3.2 Bureau of Land Management (BLM)

#### 3.2.1 Contacts

- Lynda Roush, Field Manager 707-825-2309
- David Fuller, Planning and Environment Coordinator 707-825-2315 (Arcata Field Office – BLM – 1695 Heindon Road)

#### 3.2.2 Call History

- Lynda Rouse contacted by telephone on 1/15/2014. Voicemail not returned.
- David Fuller contacted by telephone on 1/17/2014. See below for summary of discussion.

#### 3.2.3 Summary of Discussion

David did not believe it would be possible for pipeline alignments to pass through wilderness areas or any areas under the wild and scenic rivers designation. If it was going to be possible, his impression was that it would be very difficult to arrange as mechanical works are not allowed



through wilderness areas. East of Arcata there is not much BLM-managed land; however, there is plenty around Mendocino.

Any alignment would need to go through both the NEPA and CEQA permitting processes. If an alignment passes through BLM land, then BLM would be a cooperating agency as part of the environmental permitting process. Alignment selection needs to address potential impacts to ecology and cultural heritage. There would be no additional permitting requirements for pipeline maintenance that wouldn't have already been covered in the permitting and approval of the initial pipeline. BLM does have road construction and security standards.

The North-West Forest Plan (1994) covers both Forest Service and BLM land. David's opinion was that the forest service would have similar planning and environmental restrictions to BLM. A specific land allocation exists called "Late-Seral Reserves," which identify areas that are to be managed to be "turned back to old growth areas". These areas are precluded from development.

### **3.3 CALTRANS**

#### **3.3.1 Contacts**

- Keith Witte, Local Encroachment Permitting Agent for District 707-441-5875, [keith.witte@dot.ca.gov](mailto:keith.witte@dot.ca.gov)

#### **3.3.2 Call History**

- Keith Witte contacted by telephone on 1/10/2014. See below for summary of discussion.

#### **3.3.3 Summary of Discussion**

Keith said that Caltrans has a policy that does not allow for any longitudinal easements for utilities within their ROW. He said any exceptions to that policy cannot be approved on a District level and automatically go to Headquarters in Sacramento. Headquarters then puts together a committee to review the request. Generally the only exceptions that he has seen are for those facilities that are critical (i.e. water/sewer, electricity) and in circumstances where there are no other alternatives to provide these services to a community other than the highway. Keith stressed that these decisions aren't made at his level and turn into much more of a political type approval. He recommended GHD contact Charlie Fielder, District 1 Director, if we were interested in exploring the "political" aspect of it further. GHD did not try to contact Mr. Fielder.

### **3.4 CA Department of Fish & Wildlife/U.S. Fish & Wildlife**

#### **3.4.1 Contacts**

- Mark Wheetley, Senior Biology Specialist 707 496 9038  
CA Department of Fish and Wildlife (CDFW)
- Conor Shae, Fluvial Geomorphologist  
Kathleen Brubaker, Endangered Species Program Lead  
Arcata Field Office, U.S. Fish and Wildlife 707 825 8188

#### **3.4.2 Call History**

- Mark Wheetley contacted by telephone 4/30/2014. See below for summary of discussion.

- Conor Shae and Kathleen Brubaker contacted by telephone 5/7/2014. See below for summary of discussion.

### **3.4.3 Summary of Discussion**

#### *CA Department of Fish and Wildlife*

The Mad River is already a manipulated system. The Multi-species Habitat Conservation Plan (HCP) developed for the Mad River is the controlling policy document for the watershed that the District is required to operate within. The plan was developed with the pulp mill in operation and so already accounts for the upstream impacts of the Essex offtake. As long as the 60 MGD limit is not exceeded, the HCP will not be violated or impeded.

CDFW is currently undertaking a study on potential instream flow dedication for the 60MGD for the District in parallel to this investigation. CDFW has developed a white paper outlining their stance on out of basin transfers. A copy of this white paper was to be provided by CDFW, but it had yet to be obtained at the time of this Report. It is our understanding that the decision on out of basin transfers is largely decided on a case-by-case basis.

#### *US Fish and Wildlife Service*

The US Fish and Wildlife Service was reluctant to make any comments at this early stage of the project.

## **3.5 State Water Resources Control Board**

### **3.5.1 Contacts**

- Water Quality Division 916-341-5455
- Yvonne West, Attorney - Enforcement Division 916-341-5272
- Kathy Mrowka 916-341-5363 (contact details provided by Ray Sahlberg – Water Rights Officer from the Bureau of Reclamation).

### **3.5.2 Call History**

- Water Quality Division contacted by telephone 1/15/2014 & 5/14/2014. Voicemail not returned.
- Enforcement Division contacted by telephone 1/15/2014 & 5/14/2014. See below for summary of discussion.
- Kathy Mrowka contacted by telephone 2/10/2014. See below for summary of discussion.

### **3.5.3 Summary of Discussion**

#### *Yvonne West*

Yvonne identified two potential issues relating to this project, the first concerning water rights, and the second concerning water quality. She said that the water rights issue would need to be discussed at the State Water Resources Control Board level and the water quality issue addressed at the Regional Water Resources Control Board level.

Yvonne suggested that it would be worth initiating discussions with the Regional Water Resources Control Board now to gain a better understanding of the potential level of review required for the

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project. The Regional Board would also be able to provide some information on the likely timing of the permitting and review process.

Issues relating to the water right would depend a lot on what type of water right the District has. Yvonne suggested that making contact with a specialist water attorney would assist in the process with working with the State Board to prevent the District losing their water right.

### ***Kathy Mrowka***

Kathy was reluctant to provide too much information or to speculate at this early/reconnaissance stage of the project. She stated that the State Water Resources Control Board does not usually get involved at such an early stage of a project.

With respect to releasing Mad River water into the Eel River or Trinity/Sacramento Rivers, she was not sure if it would be possible. She also did not offer an opinion on whether it would be possible to offset the PG&E diversions at Potter Valley with Mad River water. She says it would depend on how things are structured as these issues are always system-specific and it depends on who is maintaining control of the water.

Kathy stated that input would be provided during the CEQA process and depending on the details of the Project Descriptions. SWRCB does not usually get involved in these projects until the CEQA comment phase. Kathy thought that the fish agencies would be the primary commentators with respect to discharging Mad River water into other watersheds.

## **3.6 North Coast Railroad Association**

### **3.6.1 Contacts**

- Mitch Stogner, Executive Director
- Douglas McCorkle, Property Specialist 949-433-0231  
Suite M, 419 Talmage Road, Ukiah, 707-463-3280

### **3.6.2 Call History**

- Spoke to reception by telephone on 1/15/2014. Reception provided an email address for Douglas McCorkle [ncra.dmccorkle@sbcglobal.net](mailto:ncra.dmccorkle@sbcglobal.net)
- Douglas McCorkle contacted 1/21/2014, see below for summary of discussion

### **3.6.3 Summary of Discussion**

The North Coast Railroad Association (NCRA) would be willing to provide access to their ROW. They see this project as having community benefit and also as a source of revenue for their organization. The ROW was developed in the late 1800s. There are some complications regarding segments that they own versus segments where they have use rights only. There are also some physical issues around the Eel River Canyon such as flooding and landslides. The NCRA ROW mostly extends a minimum of 25-feet on either side of the tracks, in some cases it extends up to 50-feet on either side of the tracks.

Part of the NCRA mission is to restore rail service to Willits and eventually to Eureka. To do this they need revenue and rental of their easement/ROW is one option of obtaining revenue.

Mr. McCorkle stated that NCRA possess a number of electronic maps depicting the NCRA ROW and ownership. They also have more detailed hard copies of maps at their office in Ukiah. Mr.

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McCorkle provided GHD with a general information map. He also recommended communicating with Sonoma Marin Area Rail Transit (SMART) too as they have easements south of Sonoma towards Napa. GHD did not try to contact SMART as the pipeline will likely not extend that far south.

### **3.7 Bureau of Reclamation**

#### **3.7.1 Contacts**

- Bureau of Reclamation, U.S. Department of the Interior  
Shasta and Trinity River Diversion Project  
Area Office Manager – Northern California Area Office  
16349 Shasta Dam Boulevard, Shasta Lake  
530-275-1554
- Ray Sahlberg – Water Rights Officer 916 978 5249
- Don Reck – Environmental Resources Officer, Fish Ecology 916 978 5249

#### **3.7.2 Call History:**

- Don Reck contacted by telephone 1/15/2014. See below for summary of discussion.
- Ray Sahlberg contacted by telephone 1/15/2014. See below for summary of discussion.

#### **3.7.3 Summary of Discussion**

##### ***Don Reck***

From his perspective, providing water to the Trinity or Sacramento systems is definitely worth investigating. Supply to the Trinity Reservoir would be helpful for a number of purposes, including augmentation of Klamath flows. It could provide temperature control in the main stem of the Trinity River downstream of the reservoir. It could also provide temperature control within Clear Creek within the Sacramento system or also provide the right temperature conditions for the Chinook Salmon within the Trinity River.

Mr. Reck's thoughts were that there was always value for extra water within the Trinity Reservoir. A dependable water supply for the Central Valley Project is always of use. He did not know of the business or reimbursement aspects of such an arrangement from the perspective of the Bureau.

##### ***Ray Sahlberg***

Mr. Sahlberg sees no impediment from a water rights perspective to the project based on his understanding of the Water Code. He sees their being two options:

1. For HBMWD to keep the rights to the water and just sell it to an end user, the process would need to be seen as a transfer of water from HBMWD to the end user.
2. HBMWD could sell the rights all together. This would be a permanent transfer option.

He thought that it would depend on who bought the water. The water rights holder would need to complete a change in the "points of use" and "purpose of use" of its water allocation. There might also be a chance that HBMWD could lose their right to the water due to abandonment (which he says the District is well aware of). He thought there might also be scenarios where the receiving county would receive half the water allocation. This would be done in conjunction with the State

Water Control Board. Ray suggested we get in touch with Kathy Mrowka from the State Water Control Board (See Section 3.5 of this Report).

Mr. Sahlberg stated that such a project is not unprecedented (for example the Trinity River Diversion). The Bureau has a number of customers who would be interested in additional water such as Westlands Water District. For some customers, the water could be added into the Sacramento system and could be allocated 100% to that customer. He was unsure who would have the money to buy the water.

The Wild and Scenic Rivers Designation could present a problem. Ray recommended that we follow up with California Department of Fish and Wildlife to determine if the Mad River comes under this designation (it does not). The environmental considerations of discharging foreign water into an a different system would need to go through the CEQA processes and he thought that the driver would be the requirements of the State Water Board.

The Bureau has no jurisdiction on the coast so he had no comment to make on sending the water south to Mendocino or Sonoma Counties.

### **3.8 Green Diamond**

#### **3.8.1 Contacts**

- Mike Nelson, LACO, 707-443-5054, [nelsonm@lacoassociates.us](mailto:nelsonm@lacoassociates.us)

#### **3.8.2 Summary of Discussion**

The timber company Green Diamond owns considerable pieces of property located along the proposed Eastern Alignment. Mike Nelson, consulting planner to Green Diamond, is currently working on property management-related issues. He said that Green Diamond was generally receptive to working with HBMWD on the project. They are supportive, but would need to further discuss specific right-of-way requirements for any of their property that the pipeline crosses before they made a more definitive decision.

### **3.9 General**

As outlined above and as anticipated, many of the regulatory agencies were reluctant to comment in depth on a project until it has been more fully developed and a permit application or CEQA document has been submitted and, therefore, a number of questions remain outstanding. It should also be noted that no effort was taken to reach out to the general public or many of the other potential stakeholders such as the Tribes or other landholders to discuss the potential alignments.



## **4. Reconnaissance-Level Design and Opinion of Probable Construction Cost Estimates**

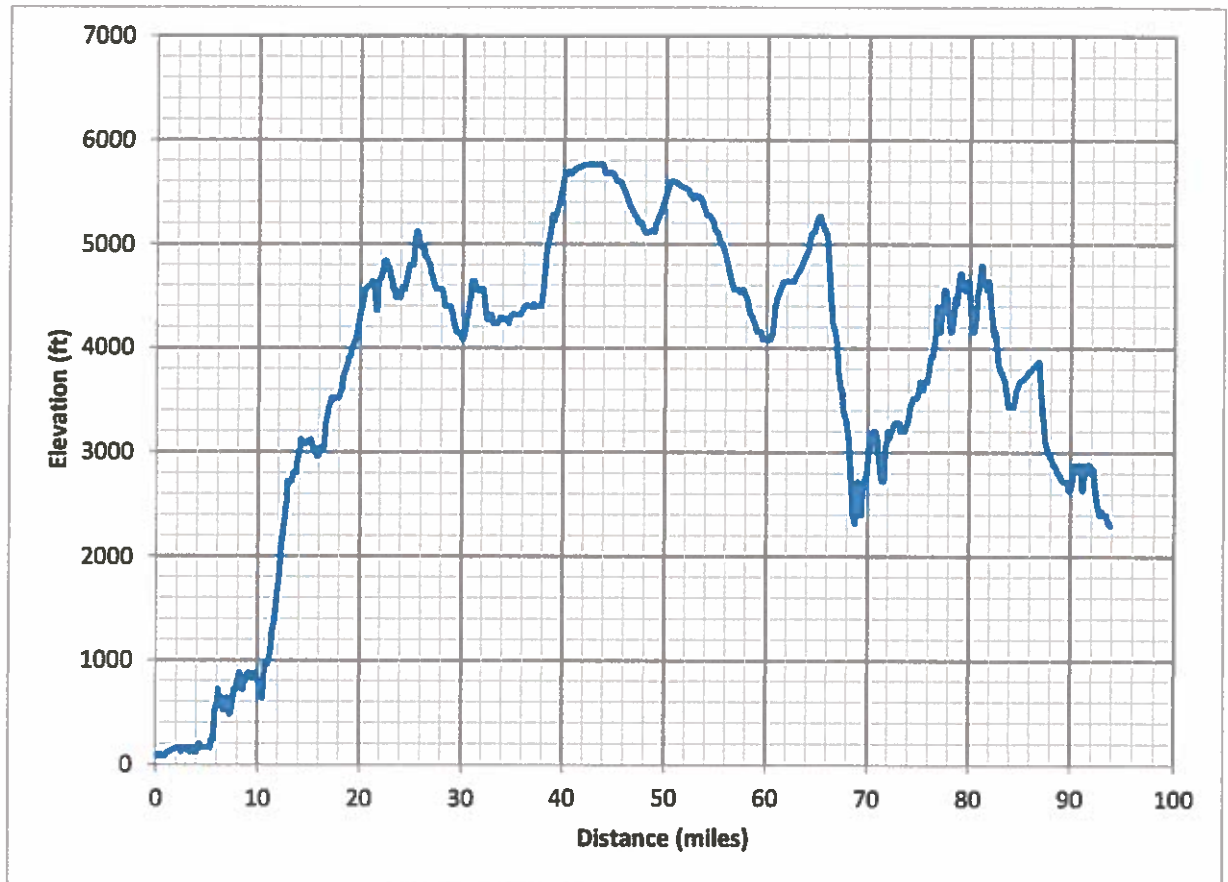
A reconnaissance-level design was developed for each of the two transmission routes selected by the Board: the Eastern route to Platina and Southern route following Kneeland and Alderpoint Roads to Lake Mendocino (see Figure 2 and Figure 3). The Southern alignment was further analyzed to include another diversion off the main line to Van Arsdale. The design was advanced to an approximately 10 percent design level, mainly to allow for the development of a Class 4 Cost Estimate. The design included the development of the pipeline alignment as well as a simplified water model to allow for the sizing of pumps and need for pressure reducing valve (PRV) stations. The requirements for access and construction roads were also analyzed, as well as items such as the number of stream crossings, the number of freeway crossings, the amount of pavement impacted, the length of electrical service required, etc. Further design and cost estimate assumptions are detailed in this section. Each alternative was analyzed separately using 24- and 36-inch pipe scenarios, with associated flows of 10 million gallons per day (MGD) and 20 MGD respectively.

The cost estimate developed for each alternative is considered to be an Association for Advancement of Cost Engineering (AACE) Class 4 Cost Estimate. AACE defines a Class 4 Cost Estimate as: "Class 4 estimates are generally based on limited information and subsequently have fairly wide accuracy ranges. They are typically used for project screening, determination of feasibility, concept evaluation, and preliminary budget approval. Typically, engineering is from 1 to 15% complete, and would comprise at a minimum the following: Plant capacity, block schematics, indicated layout, process flow diagrams for main process systems, and preliminary engineered process and utility equipment lists. Typical accuracy ranges for Class 4 estimates are -15% to -30% on the low side and +20% to +50% on the high side."

Aside from construction costs, estimates were also generated for engineering design, permitting, land/right-of-way acquisition, construction, and construction management. Operation and maintenance costs were also developed and amortization tables were used to project annual costs out for the next 50 years. These costs were then used to develop an estimated "per acre-foot" cost for the water.

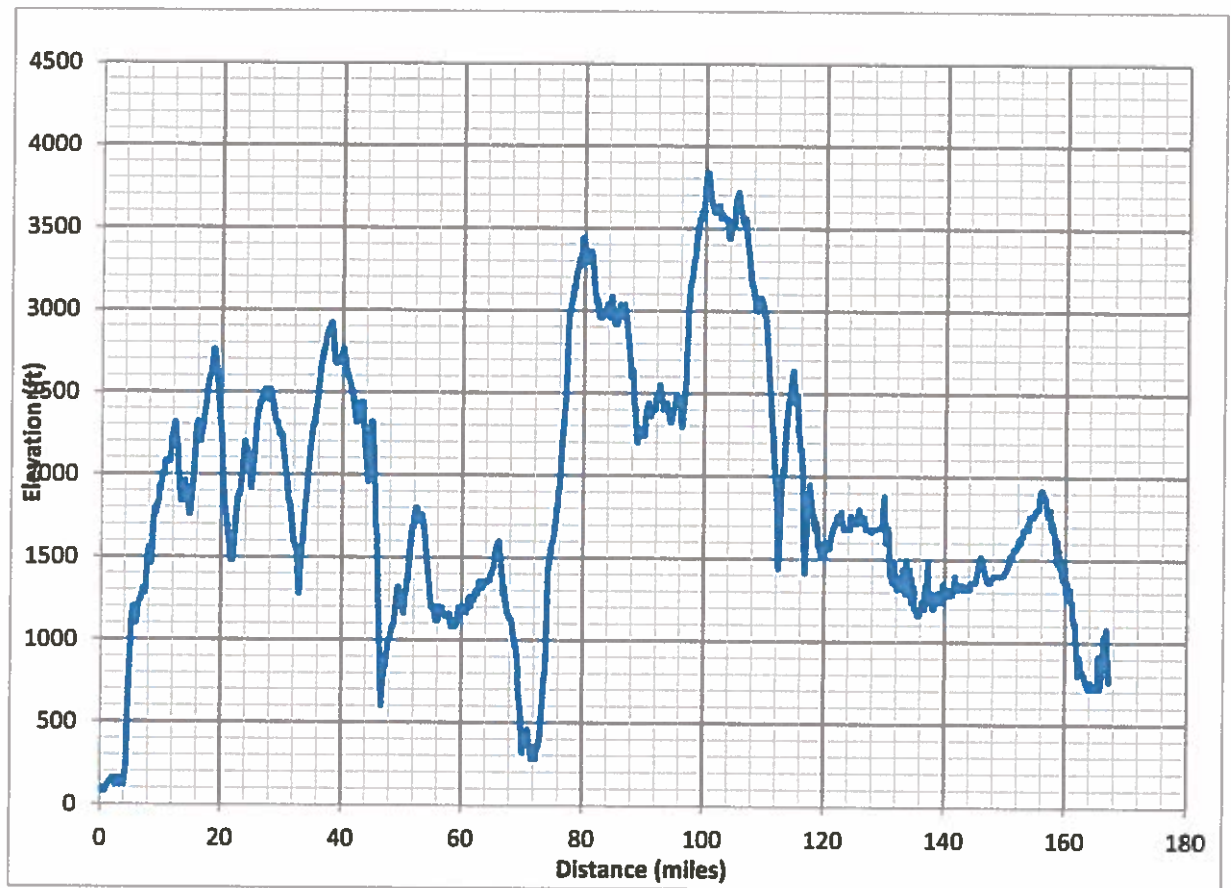
### **4.1 Reconnaissance-Level Design and Model Development**

To assist in the system design and cost estimating, a WaterCAD (hydraulic modeling software) model was generated for each alternative. An elevation profile was generated for each alignment utilizing GIS (see Figure 4, Figure 5, and Figure 6). These elevation profiles were then input into the WaterCAD model, but were smoothed out to include only the most prominent peaks and valleys, thereby simplifying the model.



**Figure 4: Elevation profile of East Alignment**

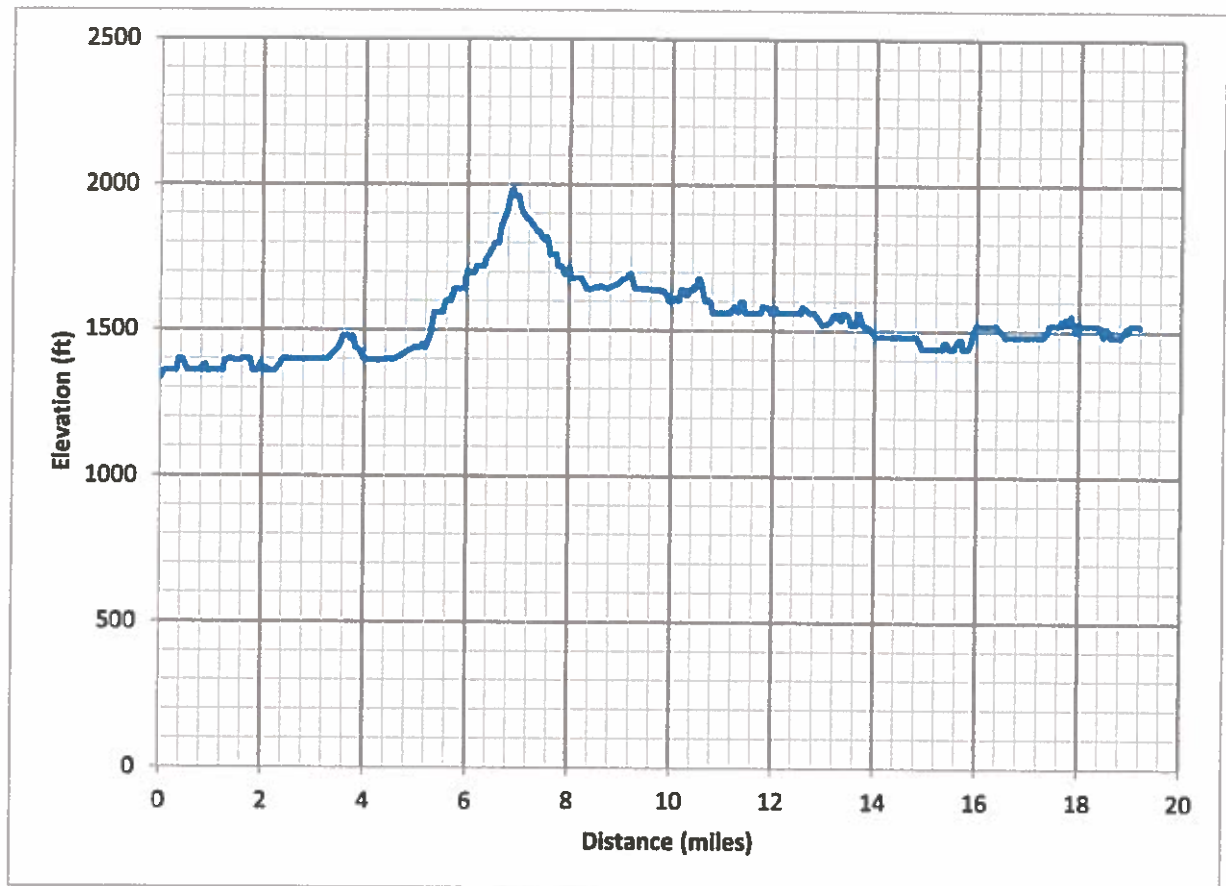
The East Alignment begins at Essex and terminates at the State Water Project in Platina. It is roughly 90 miles long and ranges in elevation from approximately 80 feet to approximately 5760 feet (NAVD88).



**Figure 5: Elevation profile of South Alignment to Lake Mendocino**

The South Alignment begins at Essex and terminates at Lake Mendocino. It is roughly 170 miles long and ranges in elevation from approximately 80 feet to approximately 3840 feet (NAVD88).





**Figure 6: Elevation profile of the Van Arsdale extension**

The Van Arsdale extension branches off from the main southern alignment toward Potter Valley/Van Arsdale Reservoir at approximately mile 144 of the alignment.

#### 4.1.1 Model Assumptions and Limitations

The models were developed with the following assumptions and limitations:

- Inputting all of the points generated in the GIS elevation profile analysis into the WaterCAD model was computationally infeasible. Therefore, the elevation profiles were smoothed out slightly and only extreme high and low points were considered in the model.
- Friction losses due to fittings and valves were assumed to be negligible compared to the elevation head and skin friction losses.
- A detailed pipeline was not designed and the location of various fittings, elbows, and isolation valves was ignored. The models consisted of the elevations at high points and low points, and the length of pipe in between these points. Pump and PRV stations were then added as detailed in the following section.
- Pumps were sized to limit system pressures to the maximum working pressure allowable for the type of pipe being proposed. Similarly, the number of PRV stations was also determined by the type of pipe being proposed in a given scenario.

- The last pump in a series of pumps was sized to provide a pressure in the pipe at the following high point of approximately 10 psi (See Section 4.1.2 for discussion of system pressures). This would minimize the amount of PRV stations required on the subsequent section of elevation loss.
- The last PRV station in each section of elevation loss was designed so that the pressure at the following low point would be approximately 350 psi. This would minimize the amount of pumps required on the subsequent section of elevation gain.

#### **4.1.2 Pipe Materials and Pump Stations**

To assess the most cost-effective approach for the type of pipe to be used, a comparison was performed for each alternative evaluating the size and number of pumps used versus the pipe material proposed. Using fewer pumps that delivered a higher total dynamic head (TDH) at a given point in the system necessitated the use of more expensive pipe with higher pressure ratings (e.g. welded steel, DIP, or HDPE pipe). Conversely, using less expensive, DR 25 PVC pipe (rated at 165 psi) for the entire length of each alternative, required the use of more pumps that delivered a lower TDH. In sections of elevation loss, more PRV stations were required when using PVC as opposed to ductile iron or steel. However, in all cases, the costs associated with extra PRVs were not as high as those associated with using DIP or steel pipe.

With the elevation changes and pipe lengths associated with the alignment alternatives, it was necessary to obtain accurate costs associated with pumping the water. Based on contact with local pump suppliers, a few feasible pumps that would be appropriate for these applications were selected. It was determined that the highest TDH that could be delivered while pumping at a rate of 2.5 MGD would be around 1400 ft (corresponds to approximately 610 psi), and the motor would be running at 750 hp. Two other pumps considered would pump at 5 MGD and deliver maximum pressures to the system of 350 psi and 165 psi, with motors running at 385 hp and 855 hp, respectively.

Three scenarios were analyzed for each alternative. The three scenarios limited the maximum pressure in the system to 165 psi (maximum working pressure of JM Eagle's DR 25 PVC), 350 psi (maximum working pressure of US Pipe's Class 350 DIP), and 610 psi, respectively. For the 165 psi scenario, DR 25 PVC pipe could be used for the entire length of each alignment alternative. For the 350 psi scenario, a combination of DIP, HDPE, and PVC was used in the cost estimate. For the 610 psi scenario, a combination of welded steel pipe, DIP, HDPE, and PVC was used. Pressures in the system were assumed to decrease in a linear manner in sections of elevation gain and increase in a linear manner in sections of elevation loss. Using this assumption in conjunction with system pressures generated from WaterCAD models, the lengths associated with the various types of pipe could be calculated for each alternative, and associated costs determined.

With pumps and motors of this size, annual energy costs proved to be a key factor when determining the cost-effectiveness of any scenario analyzed. Using DIP or welded steel pipe significantly reduced the number of pumps required as opposed to using only PVC. This reduction in pumps corresponded to reductions in potential energy costs, as well as a reduction in the cost of purchasing and installing the pumps themselves. After evaluating the three scenarios for each alignment alternative, it was determined that limiting the system pressure to a maximum of 350 psi was the most cost effective scenario when factoring in the costs associated with pipe, pump stations, and pump O&M.

A more detailed analysis of this assessment would of course need to be performed in subsequent pipeline design development, and it is possible that a more cost-effective approach could be developed with a detailed analysis of each pipeline segment.

Given the above findings, the models and cost estimates were completed assuming a combination of DIP, HDPE, and PVC pipes, and using the amount of pumps and PRVs that would be required to limit the pressure to 350 psi at any point in each respective system.

It should be noted that micro-hydropower stations could, and perhaps should, potentially be installed in place of PRVs. Micro-hydropower stations would reduce the pressure in the pipeline, as well as recoup energy and offset operational costs. However, the cost effectiveness of a micro-hydro station greatly depends on the proximity to the electrical grid to allow for use of the power. The detailed study of power grid locations was beyond the scope of this assessment, and it was felt that a more conservative approach would be to simply assess PRV costs and not to offset operation and maintenance cost with micro-hydro generated power. This is an additional design consideration/cost that should be more fully developed in subsequent design studies.

## **4.2 Class 4 Opinion Construction Costs**

The model results, including pump sizing and PRV locations, were then utilized to develop a reconnaissance-level takeoff and Class 4 Cost Estimates for each alignment alternative (See Table 3 - Table 7). Cost estimates were prepared in 2014 dollars and were developed utilizing RS Means cost tables, vender quotes, recently completed contractor cost estimates for similar projects, and engineering judgment. It was felt that a generally conservative approach was taken in the development of costs, and a 20% contingency was added to the overall costs. It should be noted that these costs are in 2014 dollars and no consideration has been included for the time it will take to permit and construct any of these alternatives, or the subsequent inflationary pressure on the costs.

Associated costs that were considered for each alignment included the following: mobilization/demobilization, construction staking, traffic control, erosion and sediment control, clearing and grubbing, construction of access roads, sawcutting, removal and replacement of asphalt, trench excavation & backfill, pipe bedding, installation of pipe and fittings, valves, pump stations, thrust blocks, highway and stream crossings, installing power lines to pump stations, land, and right-of-way and easement acquisition.

The path of each alignment route was broken up into various segments: those that were within an existing paved roadway, those outside of an existing paved roadway, those that required clearing/grubbing, and those that required the construction of access roads for construction and future maintenance requirements.

**Table 3: Class 4 Opinion of Probable Construction Cost – East Alignment, 24-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$18,000,000	\$18,000,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	450	AC	\$10,000	\$4,500,000
3	Access Roads	38	MI	\$110,000	\$4,200,000
4	Culverts	400	EA	\$810	\$330,000
5	Pipe Installation (Within Roadway)	1,220	LF	\$145	\$200,000
6	Pipe Installation (Outside of Roadway)	495,100	LF	\$115	\$56,900,000
7	Fittings and Valves	1	LS	\$4,400,000	\$4,400,000
8	Stream Crossings	3,300	LF	\$450	\$1,500,000
9	Highway 101 Crossings	0	EA	\$100,000	\$0
10	PRV Stations	19	EA	\$70,000	\$1,400,000
11	Pump Stations	13	EA	\$1,956,000	\$25,500,000
12	Electrical Wire and Conduits to Pump Stations	290,000	LF	\$50	\$14,500,000
<b>Construction Subtotal</b>					<b>\$131,430,000</b>
Permitting (10% of Construction Subtotal)					\$13,000,000
Engineering (10% of Construction Subtotal)					\$13,000,000
Land/ROW Acquisition (10% of Construction Subtotal)					\$13,000,000
Construction Management (10% of Construction Subtotal)					\$13,000,000
Contingency (20% of Construction Subtotal)					\$26,026,800
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$209,000,000</b>

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**Table 4: Class 4 Opinion of Probable Construction Cost – East Alignment, 36-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$18,000,000	\$18,000,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	450	AC	\$10,000	\$4,500,000
3	Access Roads	38	MI	\$110,000	\$4,200,000
4	Culverts	400	EA	\$810	\$330,000
5	Pipe Installation (Within Roadway)	1,220	LF	\$280	\$400,000
6	Pipe Installation (Outside of Roadway)	495,100	LF	\$245	\$121,300,000
7	Fittings and Valves	1	LS	\$5,540,000	\$5,600,000
8	Stream Crossings	3,300	LF	\$450	\$1,500,000
9	Highway 101 Crossings	0	EA	\$100,000	\$0
10	PRV Stations	19	EA	\$160,000	\$3,100,000
11	Pump Stations	13	EA	\$3,218,000	\$41,900,000
12	Electrical Wire and Conduits to Pump Stations	290,000	LF	\$50	\$14,500,000
<b>Construction Subtotal</b>					<b>\$215,330,000</b>
Permitting (10% of 24-inch Construction Subtotal)					\$13,000,000
Engineering (10% of 24-inch Construction Subtotal)					\$13,000,000
Land/ROW Acquisition (10% of 24-inch Construction Subtotal)					\$13,000,000
Construction Management (10% of 24-inch Construction Subtotal)					\$13,000,000
Contingency (20% of Construction Subtotal)					\$42,818,400
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$310,000,000</b>

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**Table 5: Class 4 Opinion of Probable Construction Cost – South Alignment, 24-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$25,500,000	\$25,500,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	260	AC	\$10,000	\$2,600,000
3	Access Roads	71	MI	\$110,000	\$7,900,000
4	Culverts	750	EA	\$810	\$610,000
5	Pipe Installation (Within Roadway)	691,680	LF	\$140	\$96,900,000
6	Pipe Installation (Outside of Roadway)	190,080	LF	\$110	\$21,000,000
7	Fittings and Valves	1	LS	\$7,500,000	\$7,500,000
8	Stream Crossings	6,500	LF	\$450	\$3,000,000
9	Highway 101 Crossings	5	EA	\$100,000	\$500,000
10	PRV Stations	28	EA	\$70,000	\$2,000,000
11	Pump Stations	16	EA	\$1,751,000	\$28,100,000
12	Electrical Wire and Conduits to Pump Stations	201,000	LF	\$50	\$10,100,000
<b>Construction Subtotal</b>					<b>\$205,710,000</b>
Permitting (10% of Construction Subtotal)					\$20,500,000
Engineering (10% of Construction Subtotal)					\$20,500,000
Land/ROW Acquisition (10% of Construction Subtotal)					\$20,500,000
Construction Management (10% of Construction Subtotal)					\$20,500,000
Contingency (20% of Construction Subtotal)					\$41,028,000
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$329,000,000</b>

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**Table 6: Class 4 Opinion of Probable Construction Cost – South Alignment, 36-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$25,500,000	\$25,500,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	260	AC	\$10,000	\$2,600,000
3	Access Roads	71	MI	\$110,000	\$7,900,000
4	Culverts	750	EA	\$810	\$610,000
5	Pipe Installation (Within Roadway)	691,680	LF	\$285	\$197,200,000
6	Pipe Installation (Outside of Roadway)	190,080	LF	\$240	\$45,700,000
7	Fittings and Valves	1	LS	\$9,440,000	\$9,500,000
8	Stream Crossings	6,500	LF	\$450	\$3,000,000
9	Highway 101 Crossings	5	EA	\$100,000	\$500,000
10	PRV Stations	31	EA	\$160,000	\$5,000,000
11	Pump Stations	15	EA	\$3,064,000	\$46,000,000
12	Electrical Wire and Conduits to Pump Stations	201,000	LF	\$50	\$10,100,000
<b>Construction Subtotal</b>					<b>\$353,610,000</b>
Permitting (10% of 24-inch Construction Subtotal)					\$20,500,000
Engineering (10% of 24-inch Construction Subtotal)					\$20,500,000
Land/ROW Acquisition (10% of 24-inch Construction Subtotal)					\$20,500,000
Construction Management (10% of 24-inch Construction Subtotal)					\$20,500,000
Contingency (20% of Construction Subtotal)					\$69,661,200
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$505,000,000</b>

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**Table 7: Class 4 Opinion of Probable Construction Cost – Van Arsdale Extension, 24-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$3,054,000	\$3,100,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	40	AC	\$10,000	\$400,000
3	Access Roads	7	MI	\$117,000	\$900,000
4	Culverts	74	EA	\$810	\$60,000
5	Pipe Installation (Within Roadway)	79,200	LF	\$180	\$14,260,000
6	Pipe Installation (Outside of Roadway)	26,400	LF	\$150	\$4,000,000
7	Fittings and Valves	1	LS	\$2,200,000	\$2,200,000
8	Stream Crossings	1,550	LF	\$450	\$700,000
9	Highway 101 Crossings	1	EA	\$100,000	\$100,000
10	PRV Stations	0	EA	\$70,000	\$0
11	Pump Stations	1	EA	\$1,264,000	\$1,300,000
12	Electrical Wire and Conduits to Pump Stations	11,000	LF	\$50	\$600,000
<b>Construction Subtotal</b>					<b>\$27,620,000</b>
Permitting (10% of Construction Subtotal)					\$2,500,000
Engineering (10% of Construction Subtotal)					\$2,500,000
Land/ROW Acquisition (10% of Construction Subtotal)					\$2,500,000
Construction Management (10% of Construction Subtotal)					\$2,500,000
Contingency (20% of Construction Subtotal)					\$5,422,600
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$43,000,000</b>

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**Table 8: Class 4 Opinion of Probable Construction Cost – Van Arsdale Extension, 36-inch**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization, Staking, Traffic Control, Erosion Control	1	LS	\$3,054,000	\$3,100,000
2	Clearing/Grubbing (for Pipeline and Access Roads)	40	AC	\$10,000	\$400,000
3	Access Roads	7	MI	\$174,000	\$1,300,000
4	Culverts	74	EA	\$810	\$60,000
5	Pipe Installation (Within Roadway)	79,200	LF	\$370	\$29,310,000
6	Pipe Installation (Outside of Roadway)	26,400	LF	\$325	\$8,600,000
7	Fittings and Valves	1	LS	\$2,640,000	\$2,700,000
8	Stream Crossings	1,550	LF	\$450	\$700,000
9	Highway 101 Crossings	1	EA	\$100,000	\$100,000
10	PRV Stations	1	EA	\$160,000	\$200,000
11	Pump Stations	1	EA	\$2,064,000	\$2,100,000
12	Electrical Wire and Conduits to Pump Stations	11,000	LF	\$50	\$600,000
<b>Construction Subtotal</b>					<b>\$49,170,000</b>
Permitting (10% of 24-inch Construction Subtotal)					\$2,500,000
Engineering (10% of 24-inch Construction Subtotal)					\$2,500,000
Land/ROW Acquisition (10% of 24-inch Construction Subtotal)					\$2,500,000
Construction Management (10% of 24-inch Construction Subtotal)					\$2,500,000
Contingency (20% of Construction Subtotal)					\$9,859,400
<b>Base Bid Total Opinion of Probable Construction Cost</b>					<b>\$69,000,000</b>

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#### **4.2.1 East Alignment**

The beginning portion of the East Alignment would follow the existing City of Eureka waterline easement, but then quickly begin climbing into forested areas, some of which are fairly steep. This area would require clearing and grubbing and the construction of some access roads, graded to the steeper incline. However, this alignment generally remains in close proximity to existing roads, including a large number of logging roads. Once the alignment reaches Highway 36, it will begin to follow the PG&E natural gas line easement and will require less clearing and grubbing and access road construction. The entire alignment is relatively hard to access, and hauling and disposal of materials will be more expensive. The climb up South Fork ridge will also require an estimated seven pump stations. Power will of course also have to be brought into these stations and it was assumed that power to all the stations would be provided via underground conduits installed in a common trench with the pipeline. Estimates were made to the length of run to the nearest distribution lines, and electrical transformers were sized and included in the cost estimate. Stream crossings for the east alignment are relatively few but do include the Mad River, the South Fork of the Trinity River, Hayfork Creek, and the middle fork of Cottonwood Creek. It was assumed that each of these crossings would be horizontally directionally drilled. The costs for the eastern alignment were ended at Platina. If the State Water Resources Control Board and other regulatory agencies would allow it, the discharge would go into Cottonwood Creek at this point, which flows into the Sacramento River located approximately 20 miles to the east. If this would not be allowed, approximately 30 miles of additional pipe would be installed along Platina Road to the Sacramento River. This installation would be relatively easy compared to the majority of the other installation along this alignment, and would be able to flow by gravity to the river.

#### **4.2.2 South Alignment**

The Southern alignment follows roadways for approximately 70% of its length. This increases the pavement demolition and replacement costs, but greatly reduces the number of access and maintenance roads that would have to be constructed. The elevation gain along this alignment is also less than the eastern alignment and the number of pump stations was estimated at 16. Access to the power grid would also be required for these stations and approximately 200,000 feet of wiring and conduit would be installed. Roughly 20% of the alignment would require clearing and grubbing, and approximately 70 miles of access roads would be required. This alignment would also have to cross the Van Duzen River at Bridgeville, the Eel River at Alderpoint, as well as approximately 20 other smaller streams. Again, it was assumed that all these crossings would be horizontally directionally drilled. The pipe would also have to cross Highway 101 at four locations and Highway 20 at one location. It was assumed that all of these crossings would have to be jack & bored under the highway.

The extension out to Van Arsdale Reservoir/the Potter Valley Diversion would generally follow roadways (Reynolds Hwy, Canyon Rd, Tomki Rd, Gibson, Ridgeway Hwy), which will require extensive pavement demo and repair, but cut down on the clearing and grubbing and access road construction requirements. This portion of the alignment does cross a ridgeline and drop down into Tomki Creek and will have to be pumped over both these ridges to get to the Reservoir. It will also have to cross some of the minor drainages that flow into Tomki Creek, but there are no major river crossings.

### 4.2.3 Costing Assumptions

As mentioned, this is a Class 4 Cost estimate and many assumptions were required to develop the costs. Some of the key assumptions include:

- 2014 dollars, with no cost escalation for inflation added
- Mobilization/demobilization
  - East Alignment: assumed seven working months per year (140 days), work completed in six years, and \$1,500,000 for each occurrence of mobilization/demobilization
  - South Alignment: assumed seven working months per year (140 days), work completed in four years, four crews, and four mobilization/demobilization occurrences for each crew at \$750,000 each
- Assumed a survey crew would stake 2,000 ft/day at \$450/hr
- Traffic control
  - East Alignment: assumed 840 total working days, \$400/hr for a traffic control crew
  - South Alignment: assumed 440 working days for four traffic control crews at \$400/hr per crew
- Erosion and sediment control would be approximately 2.5% of the total construction cost for the 24-inch pipe scenario (this number was also used for the 36-inch pipe scenario for each alignment)
- Any necessary clearing/grubbing would be 30 feet wide across the length of clearing/grubbing areas
- Access roads, where required, would be 12 feet wide
- Culverts would be required for every 500 feet of access road
- A crew of two laborers, one operator, and one bulldozer rental would cost \$3,480 per day, and this crew could construct 600 feet of access road per day
- Aggregate base would be hauled 20 miles to arrive at the project site
- Removed asphalt could be disposed/recycled at no cost other than the cost to haul it. It was assumed the length of the haul was 40 miles
- Trenches would be two feet wider than the associated pipe (one foot on either side), there would be 6" of pipe bedding, and five feet of cover
- Trenches outside of the roadway would be backfilled with native material
- 10% of the native material encountered would not be suitable for backfilling in the pipe zone, and imported fill would be required
- 25% of the difference between excavated native and native used for backfill would need to be hauled offsite
- Material and installation cost for fittings would be 5% of the total pipe cost for 24-inch pipe and 3% of the total cost for 36-inch pipe
- There would be one butterfly valve per mile of pipe
- Cost of purchasing a PRV was doubled to include installation

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- One cubic yard of concrete would be required for thrust blocks per thousand linear feet of pipe
- There would be one redundant pump at each pump station that would not typically be in use
- Cost of purchasing a pump was doubled to include installation
- Construction of a concrete block pump house would cost \$30,000
- Stream crossings would require 100-feet of directional drilling on each side of the stream
- Engineering would be 10% of the total construction cost
- Permitting would be 10% of the total construction cost
- Land/right-of-way acquisition would be 10% of the total construction cost
- Construction management would be 10% of the total construction cost

More detailed construction costs and sources are included in Appendix A and are summarized below in the Table 9.

**Table 9: Summary of Costs Associated with Each Alternative (in millions of dollars)**

Item	East Route 24-inch	East Route 36-inch	South Route 24-inch	South Route 36-inch	Van Arsdale Extension 24-inch	Van Arsdale Extension 36-inch
Construction	\$130	\$214	\$205	\$348	\$27	\$49
Permitting	\$13	\$13	\$20.5	\$20.5	\$2.5	\$2.5
Engineering	\$13	\$13	\$20.5	\$20.5	\$2.5	\$2.5
Land/ROW Acquisition	\$13	\$13	\$20.5	\$20.5	\$2.5	\$2.5
Construction Management	\$13	\$13	\$20.5	\$20.5	\$2.5	\$2.5
Contingency	\$26	\$42	\$41	\$70	\$5	\$10
<b>Total Cost</b>	<b>\$208</b>	<b>\$309</b>	<b>\$328</b>	<b>\$500</b>	<b>\$43</b>	<b>\$69</b>

With the East alignment being shorter than the South alignment, the overall construction cost would be significantly lower. If the Van Arsdale Extension were constructed, it would likely be an addition to the South alignment. The costs listed in Table 9 do not include operation and maintenance costs. These costs are included in the projected costs in Section 5.



## 5. Annual Projected Cost

### 5.1 Annual Operation and Maintenance Costs for Delivery of Water

The greatest cost associated with operation and maintenance of the delivery pipeline (at least in the short-term) would be the electrical costs associated with pumping. Floway Pumps has software that will estimate the annual electrical costs associated with their pumps. The pumps that were selected for each of the alternatives were input into these models and the electrical costs calculated. The calculated efficiencies of each pump (ranging from 82% to 84%) were utilized in the model, but a complete wire to water efficiency was not estimated. Electrical costs were assumed to be \$0.10/kWh.

The software then generated an annual energy cost, and an assumed maintenance cost of \$10,000 per pump was added to this energy cost. Given the amount of water that would be pumped and the elevation gains in each alignment, it is not surprising the annual energy costs are very high. The energy costs for the pumps that were used ranged from \$250,000/year per pump (385 hp pump) to \$560,000/year per pump (855 hp pump).

### 5.2 Amortization of Construction Capital Costs & Estimated Water Cost Per Acre-foot

In order to determine the estimated cost of water per acre-foot for each alignment, the construction costs amortized over a 50-year lifespan. A bond rate of 5.5% was assumed over the 50 years. It should be noted that in order to amortize over a 50-year term, this would also necessitate at least a 50-year contract term for the water sales and it is likely that any potentially customer would request and even longer contract term to ensure that their investment is fully recouped. The amortized construction costs were then divided by the 10 MGD and 20 MGD rates to generate a per acre-foot cost for the water. The amortized construction costs, interest paid and converted cost per acre-foot for construction are shown in Table 10.

Similarly the annual operation and maintenance cost were divided by the 10 and 20 MGD rates to calculate a per acre-foot cost for O&M, which was then added to the construction costs, and the \$200/acre-foot "availability fee", yielding the overall estimated costs per acre-foot for the water delivered to the end point of each alignment (Table 11). As shown in Table 11, this cost varies from approximately \$2,000 to \$3,000/acre-foot, with the lowest cost being for the 36-inch pipeline along the eastern alignment, and the highest cost being for the 24-inch pipeline along the southern alignment. The larger 36-inch pipeline is the more cost effective option for each of the alignments, and if a further assessment of these alternatives is pursued, an option to provide 40 MGD (48-inch diameter pipe) should be considered.

The \$2,000-\$3,000/acre-foot are considerably higher than what the District has historically been paid for their industrial water. It is also considerably higher than what is currently being charge for domestic water in Sonoma and Mendocino Counties (approximately \$100 to \$1,500/acre-foot). There is also a current proposal to raise the height of the dam at Lake Mendocino to provide extra water to some of the entities in Sonoma and Mendocino Counties. The estimated construction costs for that project are \$250 - \$300 million, and this additional source of water would be in direct competition to some of the potential users of the District's excess water.

However, the \$2,000-\$3,000/acre-foot costs are comparable to desalinization costs, which is often cited as the potential source for additional water along the California coast. The 'generic' cost

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figures of \$2,500 to \$3,500 per acre-foot are routinely quotes as the cost of desalinization; however, an estimate in excess of \$10,000 per acre-foot on a project currently under study is public knowledge. The various factors that impact the overall costs of desalinization are many including the potential size of the plant (smaller plants have much higher unit costs), the intake and concentrate discharge locations, feed water quality, proximity to electrical infrastructure, proximity to water distribution system, etc., and the magnitude of the cost impacts of each of these factors can be significant and cumulative. In addition, in California, the Permitting and Regulatory costs associated with intake and effluent discharge facilities can be enormous and only time and the implementation of various projects will prove actual costs. While there are several desalinization plants in the planning stage in California, none have been successfully built to date, and several have run into serious technical, environmental, and political issues that may terminate the projects.

One of the other significant factors that may make transportation a more favorable option than desalinization is the reduced capital cost requirements. For example, RBF Consulting recently completed a Technical Memorandum dated October 5, 2011 and titled "Cost Analysis of Water Supply Alternatives". The Memorandum looked at the cost for several alternatives to "solve the water supply deficit in CAW's Coastal Division" (i.e. the area in and around Monterey/Carmel). Capital costs ranged from \$362M for the proposed 10 MGD Monterey Desalination project to \$583M for a Deep Water Desalination plant at Moss Landing, considerably more than the anticipated costs for the pipeline project.

The ongoing operations and maintenance costs for a desalinization plant would also be quite high, estimated to be \$13.2M/year by RBF for the Monterey Desalination project. Although operation costs for the pipeline option are not insignificant, and maintenance would be required on the pipeline and pumping facilities, the operation and maintenance costs for the pipeline are anticipated to be considerably less than a desalinization plant. Although a life cycle cost analysis is beyond the scope of this report, it is likely that a life cycle cost comparison of the pipeline vs. desalinization would be very favorably weighted toward the pipeline option.



**Table 10: Amortized<sup>1</sup> construction cost per acre-foot**

Item	East Route 24-inch	East Route 36-inch	South Route 24-inch	South Route 36-inch	Van Arsdale Extension 24- inch <sup>2</sup>	Van Arsdale Extension 36- inch <sup>2</sup>
Construction, Permitting, ROW, and Design	\$208,000,000	\$309,000,000	\$328,000,000	\$500,000,000	\$43,000,000	\$69,000,000
Monthly Payment	\$1,000,000	\$1,500,000	\$1,600,000	\$2,500,000	\$211,000	\$338
Total Interest Paid	\$403,300,000	\$599,200,000	\$636,000,000	\$969,500,000	\$83,400,000	\$134
Total Paid Const. Costs	\$611,300,000	\$908,200,000	\$964,000,000	\$1,470,000,000	\$126,400,000	\$203
Construction Cost/Acre-ft	\$1,092	\$811	\$1,721	\$1,312	\$226	\$181

**Table 11: Amortized<sup>1</sup> total cost per acre-foot**

Item	East Route 24-inch	East Route 36-inch	South Route 24-inch	South Route 36-inch	Van Arsdale Extension 24- inch <sup>2</sup>	Van Arsdale Extension 36- inch <sup>2</sup>
Construction Cost/Acre-ft	\$1,092	\$811	\$1,721	\$1,312	\$226	\$181
O&M Cost/Acre-ft	\$1,015	\$1,015	\$1,149	\$1,149	\$ 46	\$ 46
District Fee/Acre-ft	\$200	\$200	\$200	\$200	\$200	\$200
Total Cost/Acre-ft	\$2,306	\$2,025	\$3,070	\$2,661	\$472	\$427

<sup>1</sup> A bond rate of 5.5% was assumed over a 50-year amortization period.

<sup>2</sup> Note that the costs associated with the Van Arsdale Extension would be added to those of the South Route. This document is in draft form. The contents, including any opinions, conclusions or recommendations contained in, or which may be implied from, this draft document must not be relied upon. GHD reserves the right, at any time, without notice, to modify or retract any part or all of the draft document. To the maximum extent permitted by law, GHD disclaims any responsibility or liability arising from or in connection with this draft document.

## 6. Summary

As part of the Humboldt Bay Municipal Water District's (HBMWD or District) Water Resource Planning efforts, GHD has been engaged to undertake a reconnaissance-level assessment for feasible pipeline routes to transfer excess HBMWD water to potential customers to the south or east of their Essex Diversion Facility. The District has a Water Right to 75 million gallons per day (MGD), which has historically included 60 MGD of industrial or unfiltered and untreated surface water from the Mad River, diverted at their Pump Station 6, Surface Water Diversion Station at Essex, near Arcata, CA. This water was previously provided to and utilized at the pulp mills on the Samoa Peninsula in their industrial processes. The first mill closed in 1994-95, and the second mill closed in 2010-11. The closure of the mills had a large financial impact on the District's operations. The District's right to this water is also in jeopardy when it comes up for permit renewal in 2029 if the water is not utilized. With the closure of the mills, loss of associated water sales revenue, and possible jeopardization of the Water Right, HBMWD has begun to look for alternative customers or uses for this water.

The purpose of this report is to present a number of potential pipeline routes for transferring HBMWD water to potential customers and determine whether the construction and operation and maintenance costs associated with these pipelines would yield "acceptable" water rates for the customers and the District. The report presents seven potential pipeline routes to transfer HBMWD water to potential customers to the north, south or east of the Essex Diversion Facility. Two of the seven alignments (an eastern route to the State Water Project and a Southern route following Kneeland and Alderpoint Roads to Lake Mendocino) were selected by the Board for further investigation and assessment. A potential add-on to the southern alignment to divert water to the Van Arsdale Reservoir/Potter Valley Diversion was also analyzed. WaterCAD models were developed for each alignment for both a 24-inch (10 MGD) and 36-inch (20 MGD) diameter pipe. Costs associated with design, permitting, land/ROW acquisition, and construction were then estimated for each alignment and pipe diameter. The estimated construction costs were then amortized over a 50 year period, assuming a bond rate of 5.5%, and converted in a cost per acre-foot of water. To this cost was added the estimated Operation and Maintenance Costs and the District's availability fee, and these costs were divided by the rate of water delivery to obtain a cost per acre-foot. The estimated construct costs and per acre-foot cost are summarized in the following Tables.

**Table 12: Amortized<sup>1</sup> total cost per acre-foot**

Item	East Route 24-inch	East Route 36-inch	South Route 24-inch	South Route 36-inch	Van Arsdale Extension 24-inch	Van Arsdale Extension 36-inch
Construction Cost/Acre-ft	\$1,092	\$811	\$1,721	\$1,312	\$226	\$181
O&M Cost/Acre-ft	\$1,015	\$1,015	\$1,149	\$1,149	\$ 46	\$ 46
District Fee/Acre-ft	\$200	\$200	\$200	\$200	\$200	\$200
<b>Total Cost/Acre-ft</b>	<b>\$2,306</b>	<b>\$2,025</b>	<b>\$3,070</b>	<b>\$2,661</b>	<b>\$472</b>	<b>\$427</b>

As part of this investigation, GHD also contacted a number of regulatory and permitting agencies, Southern Humboldt County communities, and other stakeholders to gather information on the anticipated regulatory constraints, as well as the interest in the District's water by Southern Humboldt Communities. In general, stakeholders were receptive to the project, but most regulatory and permitting agencies were very reluctant to commit to any definitive comments prior to the completion of permit applications or CEQA documents. Extensive additional consultation would still need to occur with these agencies, as well as the Tribes and other concerned Stakeholders if the project moves forward. The only southern Humboldt Community to definitively state that there were interested in the water was the City of Rio Dell. Other communities generally stated that they currently have sufficient water or would need to review the economics in depth before they would consider it.

As shown in Table 12, the cost varies from approximately \$2,000 to \$3,000/acre-foot, with the lowest cost being for the 36-inch pipeline along the eastern alignment, and the highest cost being for the 24-inch pipeline along the southern alignment. The larger 36-inch pipeline is the more cost effective option for each of the alignments and if a further assessment of these alternatives is pursued, an option to provide 40 MGD (48-inch diameter pipe) should be considered.

The \$2,000-\$3,000/acre-foot are of course considerable higher than what the District has historically been paid for their industrial water. It is also considerably higher than what is currently being charge for domestic water in Sonoma and Mendocino Counties (approximately \$100 to \$1,500/acre-foot). There is also a current proposal to raise the height of the dam at Lake Mendocino to provide extra water to some of the entities in Sonoma and Mendocino Counties. The estimated construction costs for that project are \$250 - \$300 million, and this additional source of water would be in direct competition to some of the potential users of the District's excess water.

However, the \$2,000-\$3,000/acre-foot costs are comparable to desalinization costs, which are often cited as the potential source for additional water along the California coast. The 'generic' cost figures of \$2,500 to \$3,500 per acre-foot are routinely quotes as the cost of desalinization; however, an estimate in excess of \$10,000 per acre-foot on a project currently under study is public knowledge. One of the other significant factors that may make transportation a more favorable option than desalinization is the reduced capital cost requirements. For example, RBF Consulting recently completed a Technical Memorandum dated October 5, 2011 and titled "Cost Analysis of Water Supply Alternatives". The Memorandum looked at the cost for several alternatives to "solve

<sup>1</sup> A bond rate of 5.5% was assumed over a 50-year amortization period.

the water supply deficit in CAW's Coastal Division" (i.e. the area in and around Monterey/Carmel). Capital costs ranged from \$362M for the proposed 10 MGD Monterey Desalination project to \$583M for a Deep Water Desalination plant at Moss Landing, considerably more than the anticipated costs for the pipeline project. The ongoing operations and maintenance costs for a desalinization plant would also be quite high, estimated to be \$13.2M/year by RBF for the Monterey Desalination project. Although operation costs for the pipeline option are not insignificant, and maintenance would be required on the pipeline and pumping facilities, the operation and maintenance costs for the pipeline are anticipated to be considerably less than a desal plant. Although a life cycle cost analysis is beyond the scope of this report, it is likely that a life cycle cost comparison of the pipeline vs. desalinization would be very favorably weighted toward the pipeline option.

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## Appendices



## **Appendix A –Cost Estimating Spreadsheets**

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Appendix A contains more detailed costing information for each of the alignments than that given in the main Report. More condensed versions of the tables contained in this appendix are given in Section 4.2. This appendix details all of the items that were considered in generating the tables given in Section 4.2. The numbers presented in the following tables include estimates for costs associated with construction only. The tables in this appendix do not include cost estimates for permitting, engineering, land/right-of-way acquisition, construction management, or a contingency. These numbers can be found in the tables presented in Section 4.2.

**Table A-1: Estimate of construction costs for the 24-inch East alignment**

Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$10,000,000	\$10,000,000
2	Construction Staking	1	LS	\$1,500,000	\$1,500,000
3	Traffic Control	1	LS	\$3,000,000	\$3,000,000
4	Erosion & Sediment Control	1	LS	\$3,500,000	\$3,500,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	450	AC	\$10,000	\$4,500,000
6	Access Roads - Rough Grading	38	MI	\$31,000	\$1,200,000
7	Culverts	400	EA	\$810	\$330,000
8	Class II Aggregate Base for Access Roads	59,600	CY	\$50	\$3,000,000
9	Sawcutting (3" thick asphalt)	2,000	LF	\$2	\$5,000
10	Hauling of Removed Asphalt	100	CY	\$18	\$2,000
11	Trench Excavation	551,000	CY	\$8	\$4,600,000
12	Pipe Bedding (sand), includes hauling cost and compaction	36,800	CY	\$50	\$1,900,000
13	Material and Installation Cost for Pipe	495,300	LF	\$87	\$43,100,000
14	Material Cost for Fittings	1	LS	\$2,155,000	\$2,200,000
15	Stream Crossings	3,300	LF	\$450	\$1,500,000
16	Highway 101 Crossings	0	EA	\$100,000	\$0
17	ARVs	70	EA	\$10,000	\$700,000
18	24" Butterfly Valve	94	EA	\$15,000	\$1,500,000
19	PRV Stations	19	EA	\$70,000	\$1,400,000
20	Pump Stations	13	EA	\$1,922,308	\$25,000,000
21	Electrical Wire and Conduits to Pump Stations	290000	LF	\$50	\$14,500,000
22	Transformers (Pump Stations)	13	EA	\$33,840	\$500,000
23	Trench Backfilling and Compacting with Native Material	1,000	CY	\$10	\$20,000
24	Trench Backfilling and Compacting with Native Material	447,000	CY	\$10	\$4,670,000
25	Imported Backfill	8,931	CY	\$40	\$358,000

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26	Hauling of Excess Native (in roadway)	137,617	CY	\$5	\$690,000
27	Hauling of Excess Native (outside roadway)	26,117	CY	\$5	\$131,000
28	Class II Aggregate Base for Trenches	300	CY	\$50	\$100,000
29	Concrete Delivery and Placement (thrust blocks)	500	CY	\$256	\$128,000
30	Asphalt Concrete	1,084	SY	\$18	\$100,000
<b>Construction Subtotal</b>					<b>\$130,134,000</b>

**Table A-2: Estimate of construction costs for the 36-inch East alignment**

Opinion of Probable Construction Cost - East Alignment, 36" (20 MGD)					
Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$10,000,000	\$10,000,000
2	Construction Staking	1	LS	\$1,500,000	\$1,500,000
3	Traffic Control	1	LS	\$3,000,000	\$3,000,000
4	Erosion & Sediment Control	1	LS	\$3,500,000	\$3,500,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	450	AC	\$10,000	\$4,500,000
6	Access Roads - Rough Grading	38	MI	\$31,000	\$1,200,000.00
7	Culverts	400	EA	\$810	\$330,000.00
8	Class II Aggregate Base for Access Roads	59,600	CY	\$50	\$3,000,000
9	Sawcutting (3" thick asphalt)	2,000	LF	\$2	\$100,000
10	Hauling of Removed Asphalt	100	CY	\$18	\$100,000
11	Trench Excavation	781,000	CY	\$8	\$6,600,000
12	Pipe Bedding (sand), includes hauling cost and compaction	46,000	CY	\$50	\$2,300,000
13	Material and Installation Cost for Pipe	495,300	LF	\$209	\$103,400,000
14	Material Cost for Fittings	1	LS	\$3,102,000	\$3,200,000
15	Stream Crossings	3,300	LF	\$450	\$1,500,000
16	Highway 101 Crossings	0	EA	\$100,000	\$0
17	ARVs	70	EA	\$12,000	\$840,000
18	24" Butterfly Valve	94	EA	\$15,000	\$1,500,000
19	PRV Stations	19	EA	\$160,000	\$3,100,000
20	Pump Stations	13	EA	\$3,183,846	\$41,390,000
21	Electrical Wire and Conduits to Pump Stations	290000	LF	\$50	\$14,500,000
22	Transformers (Pump Stations)	13	EA	\$33,840	\$500,000
23	Trench Backfilling and Compacting with Native Material	2,000	CY	\$10	\$30,000

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24	Trench Backfilling and Compacting with Native Material	599,000	CY	\$10	\$6,250,000
25	Imported Backfill	5,389	CY	\$40	\$216,000
26	Hauling of Excess Native (in roadway)	194,811	CY	\$5	\$980,000
27	Hauling of Excess Native (outside roadway)	45,561	CY	\$5	\$228,000
28	Class II Aggregate Base for Trenches	300	CY	\$50	\$100,000
29	Concrete Delivery and Placement (thrust blocks)	500	CY	\$256	\$128,000
30	Asphalt Concrete	1,220	SY	\$18	\$100,000
<b>Construction Subtotal</b>					<b>\$214,092,000</b>

**Table A-3: Estimate of construction costs for the 24-inch South alignment**

Opinion of Probable Construction Cost - South Alignment, 24" (10 MGD)					
Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$12,000,000	\$12,000,000
2	Construction Staking	1	LS	\$3,000,000	\$3,000,000
3	Traffic Control	1	LS	\$5,500,000	\$5,500,000
4	Erosion & Sediment Control	1	LS	\$5,000,000	\$5,000,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	260	AC	\$10,000	\$2,600,000
6	Access Roads - Rough Grading	71	MI	\$31,000	\$2,300,000
7	Culverts	750	EA	\$810	\$610,000
8	Class II Aggregate Base for Access Roads	111,100	CY	\$50	\$5,600,000
9	Sawcutting (3" thick asphalt)	1,383,000	LF	\$2	\$2,900,000
10	Hauling of Removed Asphalt	38,400	CY	\$18	\$700,000
11	Trench Excavation	980,000	CY	\$8	\$8,200,000
12	Pipe Bedding (sand), includes hauling cost and compaction	65,300	CY	\$50	\$3,300,000
13	Material and Installation Cost for Pipe	883,000	LF	\$84	\$74,000,000
14	Material Cost for Fittings	1	LS	\$3,700,000	\$3,700,000
15	Stream Crossings	6,500	LF	\$450	\$3,000,000
16	Highway 101 Crossings	5	EA	\$100,000	\$500,000
17	ARVs	120	EA	\$10,000	\$1,200,000
18	24" Butterfly Valve	167	EA	\$15,000	\$2,600,000
19	PRV Stations	28	EA	\$70,000	\$2,000,000
20	Pump Stations	16	EA	\$1,717,500	\$27,500,000
21	Electrical Wire and Conduits to Pump Stations	201,000	LF	\$50	\$10,100,000

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22	Transformers (Pump Stations)	16	EA	\$33,840	\$600,000
23	Trench Backfilling and Compacting with Native Material	471,000	CY	\$10	\$4,920,000
24	Trench Backfilling and Compacting with Native Material	172,000	CY	\$10	\$1,800,000
25	Imported Backfill	15,866	CY	\$40	\$635,000
26	Hauling of Excess Native (in roadway)	127,183	CY	\$5	\$640,000
27	Hauling of Excess Native (outside roadway)	201,933	CY	\$5	\$1,010,000
28	Class II Aggregate Base for Trenches	153,700	CY	\$50	\$7,700,000
29	Concrete Delivery and Placement (thrust blocks)	880	CY	\$256	\$225,000
30	Asphalt Concrete	614,827	SY	\$18	\$11,300,000
<b>Construction Subtotal</b>					<b>\$205,140,000</b>

**Table A-4: Estimate of construction costs for the 36-inch South alignment**

Opinion of Probable Construction Cost - South Alignment, 36" (20 MGD)					
Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$12,000,000	\$12,000,000
2	Construction Staking	1	LS	\$3,000,000	\$3,000,000
3	Traffic Control	1	LS	\$5,500,000	\$5,500,000
4	Erosion & Sediment Control	1	LS	\$5,000,000	\$5,000,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	260	AC	\$10,000	\$2,600,000
6	Access Roads - Rough Grading	71	MI	\$31,000	\$2,300,000.00
7	Culverts	750	EA	\$810	\$610,000.00
8	Class II Aggregate Base for Access Roads	111,100	CY	\$50	\$5,600,000
9	Sawcutting (3" thick asphalt)	1,383,000	LF	\$2	\$2,900,000
10	Hauling of Removed Asphalt	44,800	CY	\$18	\$900,000
11	Trench Excavation	1,388,000	CY	\$8	\$11,600,000
12	Pipe Bedding (sand), includes hauling cost and compaction	81,600	CY	\$50	\$4,100,000
13	Material and Installation Cost for Pipe	883,000	LF	\$200	\$176,700,000
14	Material Cost for Fittings	1	LS	\$5,301,000	\$5,400,000
15	Stream Crossings	6,500	LF	\$450	\$3,000,000
16	Highway 101 Crossings	5	EA	\$100,000	\$500,000
17	ARVs	120	EA	\$12,000	\$1,440,000
18	24" Butterfly Valve	167	EA	\$15,000	\$2,600,000

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19	PRV Stations	31	EA	\$160,000	\$5,000,000
20	Pump Stations	15	EA	\$3,030,000	\$45,450,000
21	Electrical Wire and Conduits to Pump Stations	201,000	LF	\$50	\$10,100,000
22	Transformers (Pump Stations)	15	EA	\$33,840	\$600,000
23	Trench Backfilling and Compacting with Native Material	644,000	CY	\$10	\$6,720,000
24	Trench Backfilling and Compacting with Native Material	230,000	CY	\$10	\$2,400,000
25	Imported Backfill	9,573	CY	\$40	\$383,000
26	Hauling of Excess Native (in roadway)	185,989	CY	\$5	\$930,000
27	Hauling of Excess Native (outside roadway)	289,489	CY	\$5	\$1,448,000
28	Class II Aggregate Base for Trenches	192,100	CY	\$86	\$16,600,000
29	Concrete Delivery and Placement (thrust blocks)	880	CY	\$256	\$225,000
30	Asphalt Concrete	691,680	SY	\$18	\$12,700,000
<b>Construction Subtotal</b>					<b>\$348,306,000</b>

**Table A-5: Estimate of construction costs for the 24-inch Van Arsdale extension**

Opinion of Probable Construction Cost – Van Arsdale Extension, 24" (10 MGD)					
Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$1,437,000	\$1,500,000
2	Construction Staking	1	LS	\$359,000	\$360,000
3	Traffic Control	1	LS	\$659,000	\$660,000
4	Erosion & Sediment Control	1	LS	\$599,000	\$600,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	40	AC	\$10,000	\$400,000
6	Access Roads - Rough Grading	7	MI	\$31,000	\$300,000.00
7	Culverts	74	EA	\$810	\$60,000.00
8	Class II Aggregate Base for Access Roads	11,000	CY	\$50	\$600,000
9	Sawcutting (3" thick asphalt)	158,000	LF	\$2	\$400,000
10	Hauling of Removed Asphalt	4,400	CY	\$18	\$100,000
11	Trench Excavation	117,000	CY	\$8	\$1,000,000
12	Pipe Bedding (sand), includes hauling cost and compaction	7,800	CY	\$50	\$400,000
13	Material and Installation Cost for Pipe	105,600	LF	\$118	\$12,500,000
14	Material Cost for Fittings	1	LS	\$625,000	\$700,000

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15	Stream Crossings	1,550	LF	\$450	\$700,000
16	Highway 101 Crossings	0	EA	\$100,000	\$0
17	ARVs	120	EA	\$10,000	\$1,200,000
18	24" Butterfly Valve	20	EA	\$15,000	\$300,000
19	PRV Stations	0	EA	\$70,000	\$0
20	Pump Stations	1	EA	\$1,230,000	\$1,300,000
21	Electrical Wire and Conduits to Pump Stations	10,560	LF	\$50	\$600,000
22	Transformers (Pump Stations)	1	EA	\$33,840	\$100,000
23	Trench Backfilling and Compacting with Native Material	54,000	CY	\$10	\$570,000
24	Trench Backfilling and Compacting with Native Material	24,000	CY	\$10	\$260,000
25	Imported Backfill	1,900	CY	\$40	\$77,000
26	Hauling of Excess Native (in roadway)	15,833	CY	\$5	\$80,000
27	Hauling of Excess Native (outside roadway)	23,333	CY	\$5	\$117,000
28	Class II Aggregate Base for Trenches	17,600	CY	\$50	\$900,000
29	Concrete Delivery and Placement (thrust blocks)	110	CY	\$256	\$29,000
30	Asphalt Concrete	70,400	SY	\$18	\$1,300,000
<b>Construction Subtotal</b>					<b>\$27,113,000</b>

**Table A-6: Estimate of construction costs for the 36-inch Van Arsdale extension**

Opinion of Probable Construction Cost - South B Alignment, 36" (20 MGD)					
Item No.	Description	Quantity	Units	Unit Cost	Total
1	Mobilization/Demobilization	1	LS	\$1,437,000	\$1,500,000
2	Construction Staking	1	LS	\$359,000	\$360,000
3	Traffic Control	1	LS	\$659,000	\$660,000
4	Erosion & Sediment Control	1	LS	\$599,000	\$600,000
5	Clearing/Grubbing (for Pipeline and Access Roads)	40	AC	\$10,000	\$400,000
6	Access Roads - Rough Grading	7	MI	\$31,000	\$300,000.00
7	Culverts	74	EA	\$810	\$60,000.00
8	Class II Aggregate Base for Access Roads	11,000	CY	\$86	\$1,000,000
9	Sawcutting (3" thick asphalt)	158,000	LF	\$2	\$400,000
10	Hauling of Removed Asphalt	5,100	CY	\$18	\$100,000
11	Trench Excavation	166,000	CY	\$8	\$1,400,000
12	Pipe Bedding (sand), includes hauling cost and compaction	9,800	CY	\$66	\$700,000

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13	Material and Installation Cost for Pipe	105,600	LF	\$284	\$30,000,000
14	Material Cost for Fittings	1	LS	\$900,000	\$900,000
15	Stream Crossings	1,550	LF	\$450	\$700,000
16	Highway 101 Crossings	0	EA	\$100,000	\$0
17	ARVs	120	EA	\$12,000	\$1,440,000
18	24" Butterfly Valve	20	EA	\$15,000	\$300,000
19	PRV Stations	1	EA	\$160,000	\$200,000
20	Pump Stations	1	EA	\$2,030,000	\$2,100,000
21	Electrical Wire and Conduits to Pump Stations	10,560	LF	\$50	\$600,000
22	Transformers (Pump Stations)	1	EA	\$33,840	\$100,000
23	Trench Backfilling and Compacting with Native Material	74,000	CY	\$10	\$780,000
24	Trench Backfilling and Compacting with Native Material	32,000	CY	\$10	\$340,000
25	Imported Backfill	1,147	CY	\$64	\$74,000
26	Hauling of Excess Native (in roadway)	23,056	CY	\$15	\$350,000
27	Hauling of Excess Native (outside roadway)	33,556	CY	\$15	\$504,000
28	Class II Aggregate Base for Trenches	22,000	CY	\$86	\$1,900,000
29	Concrete Delivery and Placement (thrust blocks)	110	CY	\$256	\$29,000
30	Asphalt Concrete	79,200	SY	\$18	\$1,500,000
<b>Construction Subtotal</b>					<b>\$49,297,000</b>

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GHD Inc

718 Third Street

Eureka CA 95501

T: 1 707 443 8326 F: 1 707 444 8330 E: eureka@ghd.com

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Rev No.	Author	Reviewer		Approved for issue		
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675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532  
(707) 764-5480 (fax)  
E-mail: [cm@riodellcity.com](mailto:cm@riodellcity.com)

**CITY OF RIO DELL  
STAFF REPORT  
CITY COUNCIL AGENDA  
August 5, 2014**

TO: Mayor and Members of the City Council

THROUGH: Kyle Knopp, City Manager *3*

FROM: Brooke Woodcox, Finance Director

DATE: August 5, 2014 *BW*

SUBJECT: **Regional Surface Transportation Program (RSTP) Fiscal Year 2014-2015  
Revenue Budget Amendment and authorize Finance Director to submit RSTP  
Claim**

**RECOMMENDATIONS**

Authorize Finance Director to sign and submit the City's annual Regional Surface Transportation Program Claim and approve a budget amendment of \$21,000 for RSTP revenues distributed annually by Humboldt County Association of Governments (HCAOG).

**BACKGROUND AND DISCUSSION**

RSTP funds come from the federal excise tax on gasoline and are distributed to small cities through HCAOG. The funds are used to support transportation projects with the majority of Humboldt's distributions going towards city and county road budgets.

RSTP funds are budgeted each year, but were inadvertently left out of the 2014-2015 Operating Budget. Rio Dell's estimated allocation for fiscal year 2014-2015 is \$21,000. The addition of RSTP revenue will be used to offset costs for streets maintenance. The streets budget shortfall will decrease from \$122,733 to \$101,733.

**BUDGETARY IMPACT**

The City will receive an estimated \$21,000 for FY 2014-2015 for streets maintenance and repairs.

**ATTACHMENTS**

Distribution table  
FY 2013-2014 Annual Project List  
Statement of Compliance with Exchange Agreement  
FY 2012-2013 Annual Report

**RESOLUTION NO. 1236-2014  
A RESOLUTION OF THE CITY COUNCIL  
OF THE CITY OF RIO DELL  
AMENDING THE OPERATING BUDGET  
FOR THE FISCAL-YEAR 2014-2015**

**WHEREAS**, the City adopted Resolution 1225-2014 establishing the City's Operating and Capital Budget for the Fiscal-Year 2014-2015; and

**WHEREAS**, the City has approved and adopted its 2014-2015 fiscal year Operating and Capital Budget and identified an additional amendment that should be included to update the 2014-2015 fiscal-year budget; and

**NOW THEREFORE BE IT RESOLVED**, that the City of Rio Dell City Council does hereby amend the City of Rio Dell 2014-2015 Operating and Capital Budget increasing revenues in the amount of \$21,000 for the Regional Surface Transportation Program:

<u><b>FUND</b></u>	<u><b>REVENUE AMOUNT</b></u>
020 Gas Tax	\$ 21,000

**PASSED AND ADOPTED** by the City Council of the Rio Dell on this 5<sup>th</sup> day of August 2014, by the following vote:

Ayes:	
Noes:	None
Abstain:	None
Absent:	None

\_\_\_\_\_  
Jack Thompson, Mayor

**ATTEST:**

\_\_\_\_\_  
Karen Dunham, City Clerk

Small Agency Program based on 8.9% of the Excess Fund Apportionment			
Jurisdictions	Population Estimates*	% of Small Program population	Allocation
Blue Lake	1251	0.10	\$8,071
Ferndale	1357	0.11	\$8,754
Rio Dell	3347	0.27	\$21,592
Trinidad	361	0.03	\$2,329
Tribal Areas	6000	0.49	\$38,708
Small Program Population	12,316	100%	\$79,454

\*Population estimates for the small cities are from Table E-1, Department of Finance. Population estimates for tribes are provided by the tribes

#### Summary of Apportionments

County of Humboldt (\$139,328+\$546,526+\$40,013)	\$725,867
Arcata (\$34,401+\$63,488)	\$97,889
Blue Lake	\$8,071
Eureka (\$67,327+\$124,309)	\$191,636
Ferndale	\$8,754
Fortuna (\$21,132+\$38,946)	\$60,078
Rio Dell	\$21,592
Trinidad	\$2,329
Tribal Governments	\$38,708
<b>Total</b>	<b>\$1,154,924</b>

# HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS

## REGIONAL SURFACE TRANSPORTATION PROGRAM (RSTP)

Section 182.6(d)(1)

### Annual Project List – Fiscal Year 2013-14

(List all Potential Projects)

<u>Street/Road</u>	<u>Type of Project</u> <u>Functional Classification</u>	<u>Est. Amount</u>
CITYWIDE	STREETS - MAINTENANCE	21,592

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

BROOKE WOODCOX, FINANCE DIRECTOR

Printed Name & Title

CITY OF RIO DEL

Agency

**HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS**  
**REGIONAL SURFACE TRANSPORTATION PROGRAM (RSTP)**  
**Section 182.6(d)(1)**

**Statement of Compliance  
with Exchange Agreement**

Pursuant to the Regional Surface Transportation Program Section 182.6(d)(1) program, the undersigned claimant hereby acknowledges that he/she has received a copy of the Exchange Agreement dated **April 22, 2014** between HCAOG and the State Department of Transportation (Caltrans), and agency agrees to comply with the applicable required conditions contained therein.

Undersigned claimant also acknowledges that jurisdictions receiving State RSTP funds have complied with Section 1220.4(6) *A special fund for the purpose of depositing exchange funds has been established within a jurisdiction's special gas tax street improvement fund or county road fund.*

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

BROOKE WOODCOX, FINANCE DIRECTOR  
Printed Name and Title



# HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS

## REGIONAL SURFACE TRANSPORTATION PROGRAM (RSTP)

### Section 182.6(d)(1)

#### Annual Report

Reporting Period: Fiscal Year ending 2012-13

Amount Received \$ 25,171

Briefly describe how the RSTP funds were expended by your agency during the previous fiscal year. If expenditures do not match the previously submitted project list, please provide a written explanation.

If your agency is "saving" the RSTP funds for a larger project that cannot be funded in a single year, please indicate below. If funds are being carried over for any other reason, please explain.

1. RSTP d(1) funds were expended on the following project(s):

<u>Street/Road</u>	<u>Type of Project</u>	<u>Functional Classification</u>	<u>Amount</u>
CITYWIDE	STREETS - MAINTENANCE		\$ 25,171

2. RSTP d(1) funds are being carried over as described below:

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

BROOKE WOODCOX, FINANCE DIRECTOR  
Printed Name & Title

CITY OF RIO DELL  
\_\_\_\_\_  
Agency


---


675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532



**For Meeting of: August 5, 2014**

To: City Council

From: Kevin Caldwell, Community Development Director 

Through: Kyle Knopp, City Manager 

Date: July 29, 2014

Subject: Fence Regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC)

---

**Recommendation:**

That the City Council:

1. Receive staff's report regarding the existing Fence Regulations;
2. Open the public hearing, receive public input and deliberate;
3. Introduce Ordinance No. 324-2014 amending the Fence Regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC).
4. Continue consideration, approval and adoption of the proposed Ordinance to your meeting of August 19, 2014 for the second reading and adoption.

**Background and Discussion**

The 2013 California Building Coded (CBC) was amended to exempt fences up to seven (7) feet in height. The City's current fence regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC) reflect the previous exemption of fences up to six (6) feet in height.

The current fence regulations also refer to the Uniform Building Code (UBC). The Uniform Building Code was replaced by the California Building Code (CBC) in 2000. Staff is accordingly recommending that the fence regulations accurately reflect the California Building Code (CBC).

## **Procedural Requirements**

Pursuant to Section 17.35.010 of the City of Rio Dell Municipal Code, the following City procedures are required to amend the Ordinance:

- An amendment may be initiated by one or more owners of property affected by the proposed amendment, as set out in Section 17.35.010(3), or by action of the Planning Commission, or the City Council.
- The application of one or more property owners for the initiation of an amendment shall be filed in the office of the City Clerk on a form provided, accompanied by a filing fee.
- Subject only to the rules regarding the placing of matters on the Planning Commission agenda, the matter shall be set for a public hearing.
- Notice of hearing time and place shall be published once in a newspaper of general circulation at least ten calendar days before the hearing or by posting in at least three public places.
- At the public hearing, the Planning Commission shall hear any person affected by the proposed amendment. The hearing may be continued from time to time.
- Within 40 days of the conclusion of the hearing, the Planning Commission shall submit to the City Council a written report of recommendations and reasons therefore.
- Subject only to the rules regarding the placing of matters on its agenda, the City Council, at its next regular meeting following the receipt of such report, shall cause the matter to be set for a public hearing. Notice of the time and place of the hearing shall be given as provided in Section 17.35.010(5), hereof.
- At the public hearing, the City Council shall hear any person affected by the proposed amendment. The hearing may be continued to a specified future date, but shall be concluded within 60 days of the commencement thereof.
- The City Council shall not make any change in the proposed amendment until the proposed change has been referred to the Planning Commission for a report, and the Planning Commission report has been filed with the City Council.

### **Zone Reclassification Required Findings:**

**1. The proposed amendment is consistent and compatible with the General Plan and any implementation programs that may be affected.**

There are no polices in the General Plan which would prohibit amending the fence regulations to be consistent with State law and to accurately reflect the California Building Code (CBC).

**2. The proposed amendments have been processed in accordance with the California Environmental Quality Act (CEQA).**

Based on the nature of the project, staff has determined that the project is Statutorily Exempt pursuant to Section 15061(b) (3) of the CEQA Guidelines, Title 14, Chapter 3 of the California Code of Regulations. Pursuant to Section 15061(b) (3) of the CEQA Guidelines this exemption is covered by the general rule that CEQA applies only to projects which have the potential for causing a **significant** effect on the environment. Where it can be seen with certainty that there is no possibility that the project in question may have a significant effect on the environment, the project is not subject to CEQA. Based on the nature of the proposed amendments, including the recommended Performance Standards, staff believes there is no evidence to suggest that the amendments will have a **significant** effect on the environment.

**Attachments**

Attachment 1: Existing Fence Regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC) with the recommended changes.

Attachment 2: Ordinance No. 324-2014 amending the Fence Regulations to be consistent with the California Building Code (CBC).

## **17.30.090 Fences.**

### **(1) Corner Lots -- Sight Distance.**

In any residential district on a corner lot, there shall be no fence, wall, or hedge higher than three (3) feet, nor any obstruction to vision other than a post, column, or tree not exceeding one foot in diameter, between a height of three (3) feet and a height of ten (10) feet above the established grade of either street, within an area thirty (30) feet from the intersection of the street lot lines.

### **(2) Height Regulations.**

Any fence or wall used as a fence shall not exceed a height of ~~six (6)~~ seven (7) feet within the required front, side, or rear yard of any lot; provided, however, that in any residential district, a fence or wall used as a fence shall not exceed a height of four (4) feet within a required front yard, nor ~~six (6)~~ seven (7) feet within any required rear yard or side yard, except where otherwise permitted by these regulations.

### **(3) Exceptions.**

The Planning Commission may modify by special use permit, the height requirements of this part, upon a showing of good cause. For any such modification, the Planning Commission shall be required to make the following findings:

- (a) The proposed fence height modification will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area;
- (b) The proposed modification will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site; and
- (c) The proposed modification will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety, or general welfare.
- (d) In issuing a special use permit, the Planning Commission may require such changes or alterations in the fence as it may deem necessary to satisfy the findings specified in this part. Such changes or alterations may include, but shall not be limited to the following:

- Fence height
- Design
- Materials
- Setback from property line
- Screening or landscaping

(1) A fence or wall used as a fence which exceeds six (6) feet in height shall be defined as a "detached accessory structure" for the purpose of regulation under the provisions of this ordinance, and all applicable provisions of the ~~Uniform Building Code~~ California Building Code shall apply. [Ord. 167 § 6.05.5 1982.]



**ORDINANCE NO. 324 – 2014**



**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RIO DELL  
AMENDING THE FENCE REGULATIONS,  
SECTION 17.30.090 OF THE RIO DELL MUNICIPAL CODE**

**THE CITY COUNCIL OF THE CITY OF RIO DELL ORDAINS AS FOLLOWS:**

**WHEREAS** the 2013 California Building Coded (CBC) was amended to exempt fences up to seven (7) feet in height; and

**WHEREAS** the City's current fence regulations, Section 17.30.090 of the Rio Dell Municipal Code (RDMC) reflect the previous exemption of fences up to six (6) feet in height; and

**WHEREAS** the current fence regulations also refer to the Uniform Building Code (UBC); and

**WHEREAS** the Uniform Building Code was replaced by the California Building Code (CBC) in 2000; and

**WHEREAS** staff is accordingly recommending that the fence regulations accurately reflect the California Building Code (CBC).; and

**WHEREAS** the City has reviewed and processed the proposed amendment in conformance with Sections 65350 – 65362 of the California Government Code; and

**WHEREAS** the City has reviewed and processed the proposed amendment in conformance with Section 17.35.010 of the City of Rio Dell Municipal Code; and

**WHEREAS** the City finds that based on evidence on file and presented in the staff report that the proposed amendment is consistent and compatible with the General Plan and any implementation programs that may be affected; and

**WHEREAS** the proposed amendment has been processed in accordance with the applicable provisions of the California Government Code and the California Environmental Quality Act (CEQA); and

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Rio Dell does hereby ordain as follows:

**Section 1.**

**17.30.090 Fences**

**(1) Corner Lots -- Sight Distance.**

In any residential district on a corner lot, there shall be no fence, wall, or hedge higher than three (3) feet, nor any obstruction to vision other than a post, column, or tree not exceeding one foot in diameter, between a height of three (3) feet and a height of ten (10) feet above the established grade of either street, within an area thirty (30) feet from the intersection of the street lot lines.

**(2) Height Regulations.**

Any fence or wall used as a fence shall not exceed a height of ~~six (6)~~ seven (7) feet within the required front, side, or rear yard of any lot; provided, however, that in any residential district, a fence or wall used as a fence shall not exceed a height of four (4) feet within a required front yard, nor ~~six (6)~~ seven (7) feet within any required rear yard or side yard, except where otherwise permitted by these regulations.

**(3) Exceptions.**

The Planning Commission may modify by special use permit, the height requirements of this part, upon a showing of good cause. For any such modification, the Planning Commission shall be required to make the following findings:

- (a) The proposed fence height modification will not adversely affect the health, peace, comfort, or welfare of persons residing or working in the surrounding area;
- (b) The proposed modification will not be materially detrimental to the use, enjoyment, or valuation of property of other persons located in the vicinity of the site; and
- (c) The proposed modification will not jeopardize, endanger, or otherwise constitute a menace to the public health, safety, or general welfare.
- (d) In issuing a special use permit, the Planning Commission may require such changes or alterations in the fence as it may deem necessary to satisfy the findings specified in this part. Such changes or alterations may include, but shall not be limited to the following:
  - Fence height
  - Design

- Materials
- Setback from property line
- Screening or landscaping

(1) A fence or wall used as a fence which exceeds six (6) feet in height shall be defined as a "detached accessory structure" for the purpose of regulation under the provisions of this ordinance, and all applicable provisions of the ~~Uniform Building Code~~ [California Building Code](#) shall apply. [Ord. 167 § 6.05.5 1982.]

## **Section 2. Severability**

If any provision of the ordinance is invalidated by any court of competent jurisdiction, the remaining provisions shall not be affected and shall continue in full force and effect.

## **Section 3. Limitation of Actions**

Any action to challenge the validity or legality of any provision of this ordinance on any grounds shall be brought by court action commenced within ninety (90) days of the date of adoption of this ordinance.

## **Section 4. Effective Date**

This ordinance becomes effective thirty (30) days after the date of its approval and adoption.

**I HEREBY CERTIFY** that the forgoing Ordinance was duly introduced at a regular meeting of the City Council of the City of Rio Dell on August 5, 2014 and furthermore the forgoing Ordinance was passed, approved and adopted at a regular meeting of the City Council of the City of Rio Dell, held on the August 19, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

\_\_\_\_\_  
Jack Thompson, Mayor

ATTEST:

I, Karen Dunham, City Clerk for the City of Rio Dell, State of California, hereby certify the above and foregoing to be a full, true and correct copy of Ordinance No. 324-2014 which was passed, approved and adopted at a regular meeting of the City Council of the City of Rio Dell, held on the August 19, 2014.

\_\_\_\_\_  
Karen Dunham, City Clerk, City of Rio Dell


---


675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532



**For Meeting of: August 5, 2014**

To: City Council

From: Kevin Caldwell, Community Development Director 

Through: Kyle Knopp, City Manager 

Date: July 29, 2014

Subject: General Provisions and Exceptions, Chapter 17 of the Rio Dell Municipal Code (RDMC)

---

**Recommendation:**

That the City Council:

1. Receive staff's report regarding reformatting Chapter 17 General Provisions and Exceptions to accommodate recent amendments;
2. Open the public hearing, receive public input and deliberate;
3. Introduce Ordinance No. 325-2014 amending Chapter 17.30 of the Rio Dell Municipal Code (RDMC) to renumber the General Provisions and Exceptions to accommodate recent amendments.
4. Continue consideration, approval and adoption of the proposed Ordinance to your meeting of August 19, 2014 for the second reading and adoption.

**Background and Discussion**

The City has added a number of new regulations to Chapter 17.30, General Provisions and Exception, to the Rio Dell Municipal Code (RDMC) over the past couple of years. The Sections of Chapter 17.30 are in increments of ten, i.e. 17.30.10, 17.30.20, 17.30.30 and so on. Staff

has had to deviate from the sequential order in order to accommodate recently approved new regulations. Staff is now recommending that Chapter 17.30 be reformatted to reestablish the regulations in increments of ten. Below is the recommended renumbering of the regulations found in Chapter 17.30:

<b>Existing Section</b>	<b>Proposed Section</b>	<b>Provision</b>
17.30.010	17.30.010	Applicability
17.30.020	17.30.020	Accessory Uses and Buildings
17.30.030	17.30.030	Adult entertainment.
17.30.040	17.30.040	Airports
17.30.050	17.30.050	Animals and Animal Shelters.
17.30.060	17.30.060	Assemblages of Persons and Vehicles
17.30.070	17.30.070	Camping
17.30.075	17.30.080	Cottage Industry
17.30.073	17.30.090	Density Bonus
17.30.078	17.30.100	Emergency Shelters/Transitional Housing
17.30.080	17.30.110	Environmentally Sensitive Habitat Areas
17.30.090	17.30.120	Fences
17.30.100	17.30.130	Flag Lot Regulations
17.30.110	17.30.140	Flood Zone Regulations
17.30.120	17.30.150	Home Occupation Businesses and Address of Convenience
17.30.130	17.30.160	Lot Size Modifications
17.30.140	17.30.170	Manufactured/mobile homes on individual lots.
17.30.150	17.30.180	Manufactured/mobile home park development standards.
17.30.155	17.30.190	Medical Marijuana Regulations
17.30.160	17.30.200	Nonconforming Uses
17.30.170	17.30.210	Outdoor Advertising
17.30.180	17.30.220	Parking and Loading facilities.

<b>Existing Section</b>	<b>Proposed Section</b>	<b>Provision</b>
17.30.190	17.30.230	Parkland Dedication
17.30.200	17.30.240	Public Uses.
17.30.210	17.30.250	Public Utility Buildings and Uses.
17.30.220	17.30.260	Quasi-Public Uses.
17.30.230	17.30.270	Recreational Vehicle Park Development Standards.
17.30.240	17.30.280	Removal of Natural Materials.
17.30.250	17.30.290	Second Dwelling Units.
17.30.260	17.30.300	Signs and Nameplates.
17.30.270	17.30.310	Street Dedication and Improvement.
17.30.280	17.30.320	Swimming Pools.
17.30.290	17.30.330	Tract Offices.
17.30.300	17.30.340	Yards.

Although not codified, staff will be amending the Zoning Regulations Table of Contents to reflect the renumbering of Chapter 17.30.

### **Procedural Requirements**

Pursuant to Section 17.35.010 of the City of Rio Dell Municipal Code, the following City procedures are required to amend the Ordinance:

- An amendment may be initiated by one or more owners of property affected by the proposed amendment, as set out in Section 17.35.010(3), or by action of the Planning Commission, or the City Council.
- The application of one or more property owners for the initiation of an amendment shall be filed in the office of the City Clerk on a form provided, accompanied by a filing fee.
- Subject only to the rules regarding the placing of matters on the Planning Commission agenda, the matter shall be set for a public hearing.



- Notice of hearing time and place shall be published once in a newspaper of general circulation at least ten calendar days before the hearing or by posting in at least three public places.
- At the public hearing, the Planning Commission shall hear any person affected by the proposed amendment. The hearing may be continued from time to time.
- Within 40 days of the conclusion of the hearing, the Planning Commission shall submit to the City Council a written report of recommendations and reasons therefore.
- Subject only to the rules regarding the placing of matters on its agenda, the City Council, at its next regular meeting following the receipt of such report, shall cause the matter to be set for a public hearing. Notice of the time and place of the hearing shall be given as provided in Section 17.35.010(5), hereof.
- At the public hearing, the City Council shall hear any person affected by the proposed amendment. The hearing may be continued to a specified future date, but shall be concluded within 60 days of the commencement thereof.
- The City Council shall not make any change in the proposed amendment until the proposed change has been referred to the Planning Commission for a report, and the Planning Commission report has been filed with the City Council.

#### **Zone Reclassification Required Findings:**

#### **1. The proposed amendment is consistent and compatible with the General Plan and any implementation programs that may be affected.**

There are no polices in the General Plan which would prohibit amending the General Provisions and Exceptions to reestablish the original intended numerical sequence of the regulations.

#### **2. The proposed amendments have been processed in accordance with the California Environmental Quality Act (CEQA).**

Based on the nature of the project, staff has determined that the project is Statutorily Exempt pursuant to Section 15061(b) (3) of the CEQA Guidelines, Title 14, Chapter 3 of the California Code of Regulations. Pursuant to Section 15061(b) (3) of the CEQA Guidelines this exemption is covered by the general rule that CEQA applies only to projects which have the potential for causing a **significant** effect on the environment. Where it can be seen with certainty that there is no possibility that the project in question may have a significant effect on the environment, the project is not subject to CEQA. Based on the nature of the proposed amendments, to reestablish the original intended numerical sequence of the regulations, staff believes there is no evidence to suggest that the amendments will have a **significant** effect on the environment.

#### **Attachments**

Attachment 1: Ordinance No. 325-2014 amending Chapter 17.30 of the Rio Dell Municipal Code (RDMC) to renumber the General Provisions and Exceptions to accommodate recent amendments.

**ORDINANCE NO. 325 – 2014**



**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RIO DELL  
AMENDING CHAPTER 17.30 OF THE RIO DELL MUNICIPAL CODE (RDMC) TO  
RENUMBER THE GENERAL PROVISIONS AND EXCEPTIONS TO ACCOMMODATE  
RECENT AMENDMENTS:**

**WHEREAS** the City has added a number of new regulations to Chapter 17.30, General Provisions and Exception, to the Rio Dell Municipal Code (RDMC) over the past couple of years; and

**WHEREAS** the Sections of Chapter 17.30 are in increments of ten, i.e. 17.30.10, 17.30.20, 17.30.30 and so on; and

**WHEREAS** staff has had to deviate from the sequential order in order to accommodate recently approved new regulations; and

**WHEREAS** the Planning Commission is now recommending that Chapter 17.30 be reformatted to reestablish the regulations in increments of ten; and

**WHEREAS** the City has reviewed and processed the proposed amendment in conformance with Sections 65350 – 65362 of the California Government Code; and

**WHEREAS** the City has reviewed and processed the proposed amendment in conformance with Section 17.35.010 of the City of Rio Dell Municipal Code; and

**WHEREAS** the City finds that based on evidence on file and presented in the staff report that the proposed amendment is consistent and compatible with the General Plan and any implementation programs that may be affected; and

**WHEREAS** the proposed amendment has been processed in accordance with the applicable provisions of the California Government Code and the California Environmental Quality Act (CEQA); and

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Rio Dell finds that:

1. The proposed amendments are consistent with the General Plan and any applicable specific plan; and

2. The proposed amendments are Statutorily Exempt pursuant to Section 15061(b) (3) of the CEQA Guidelines, Title 14, Chapter 3 of the California Code of Regulations.

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Rio Dell does hereby ordain as follows:

**Section 1.**

**Chapter 17.30 General Provisions and Exceptions**

Existing Section	New Section	Provision
17.30.010	17.30.010	Applicability
17.30.020	17.30.020	Accessory Uses and Buildings
17.30.030	17.30.030	Adult entertainment.
17.30.040	17.30.040	Airports
17.30.050	17.30.050	Animals and Animal Shelters.
17.30.060	17.30.060	Assemblages of Persons and Vehicles
17.30.070	17.30.070	Camping
17.30.075	17.30.080	Cottage Industry
17.30.073	17.30.090	Density Bonus
17.30.078	17.30.100	Emergency Shelters/Transitional Housing
17.30.080	17.30.110	Environmentally Sensitive Habitat Areas
17.30.090	17.30.120	Fences
17.30.100	17.30.130	Flag Lot Regulations
17.30.110	17.30.140	Flood Zone Regulations
17.30.120	17.30.150	Home Occupation Businesses and Address of Convenience
17.30.130	17.30.160	Lot Size Modifications
17.30.140	17.30.170	Manufactured/mobile homes on individual lots.

<b>Existing Section</b>	<b>Proposed Section</b>	<b>Provision</b>
17.30.150	17.30.180	Manufactured/mobile home park development standards.
17.30.155	17.30.190	Medical Marijuana Regulations
17.30.160	17.30.200	Nonconforming Uses
17.30.170	17.30.210	Outdoor Advertising
17.30.180	17.30.220	Parking and Loading facilities.
17.30.190	17.30.230	Parkland Dedication
17.30.200	17.30.240	Public Uses.
17.30.210	17.30.250	Public Utility Buildings and Uses.
17.30.220	17.30.260	Quasi-Public Uses.
17.30.230	17.30.270	Recreational Vehicle Park Development Standards.
17.30.240	17.30.280	Removal of Natural Materials.
17.30.250	17.30.290	Second Dwelling Units.
17.30.260	17.30.300	Signs and Nameplates.
17.30.270	17.30.310	Street Dedication and Improvement.
17.30.280	17.30.320	Swimming Pools.
17.30.290	17.30.330	Tract Offices.
17.30.300	17.30.340	Yards.

## **Section 2. Severability**

If any provision of the ordinance is invalidated by any court of competent jurisdiction, the remaining provisions shall not be affected and shall continue in full force and effect.

### **Section 3. Limitation of Actions**

Any action to challenge the validity or legality of any provision of this ordinance on any grounds shall be brought by court action commenced within ninety (90) days of the date of adoption of this ordinance.

### **Section 4. Effective Date**

This ordinance becomes effective thirty (30) days after the date of its approval and adoption.

**I HEREBY CERTIFY** that the forgoing Ordinance was duly introduced at a regular meeting of the City Council of the City of Rio Dell on August 5, 2014 and furthermore the forgoing Ordinance was passed, approved and adopted at a regular meeting of the City Council of the City of Rio Dell, held on the August 19, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

---

Jack Thompson, Mayor

ATTEST:

I, Karen Dunham, City Clerk for the City of Rio Dell, State of California, hereby certify the above and foregoing to be a full, true and correct copy of Ordinance No. 325-2014 which was passed, approved and adopted at a regular meeting of the City Council of the City of Rio Dell, held on the August 19, 2014.


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Karen Dunham, City Clerk, City of Rio Dell



For Meeting of: August 5, 2014

To: City Council

From: Kevin Caldwell, Community Development Director 

Through: Kyle Knopp, City Manager 

Date: July 29, 2014

Subject: Ten (10) Foot Waterline Easement; Certificate of Acceptance

---

**Recommendation:**

That the City Council:

1. Approve and adopt Resolution 1237-2014 accepting the Easement Deed for a ten (10) foot waterline easement from the Dollar General to the City and authorizing the City Manager to execute the Certificate of Acceptance pursuant to California Government Code Section 27281;
2. Direct staff to record the Grant/Easement Deed and Certificate of Acceptance;

**Background:**

As part of the review of the Dollar General's construction project it was discovered that the City did not have an easement for an existing water line running parallel with Wildwood Avenue on the Dollar General's property. Staff required and the Dollar General agreed that the Dollar General grant an easement for the existing waterline. The Dollar General has executed the requisite deed/easement. A copy of the Deed and Exhibits is included as Attachment 1. Resolution 1237-2014 authorizing the City Manager to execute the Certificate of Acceptance is included as Attachment 2 and the Certificate of Acceptance is included as Attachment 3.



## **Attachments**

**Attachment 1: Easement/Grant Deed and Exhibits**

**Attachment 2: Resolution No. 1237-2014**

**Attachment 3: Certificate of Acceptance**

This instrument is for the  
benefit of the City of Rio Dell

**Recording Requested by:**  
City of Rio Dell  
Community Development Department

Exempt Government Code § 27383

**Return to:**  
City of Rio Dell  
675 Wildwood Avenue  
Rio Dell, CA. 95562

APN: 052-222-009

## **GRANT DEED - GRANT OF EASEMENT**

Documentary transfer tax is \$

City Transfer Tax is \$ 0 R&T 11922

- ☐ computed on full value of property conveyed, or
- ☐ computed on full value less value of liens or encumbrances remaining at time of sale,
- ☐ Unincorporated Area City of Rio Dell

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

**DG Strategic II, LLC, a Tennessee limited liability corporation (hereon referred to as GRANTOR),**

hereby GRANT(S) to

**City of Rio Dell, a municipal corporation (hereon referred to as GRANTEE)**

a non-exclusive, perpetual easement in the County of Humboldt, State of California in the location described on EXHIBIT "A" attached hereto, and as generally depicted on EXHIBIT "B" attached hereto and incorporated herein by reference (the "Water Line Easement Area"), for purposes of installing and maintaining a water line under, across, upon and through the Water Line Easement Area. Grantee shall maintain and repair the improvements installed by Grantee within the Water Line Easement Area (the "Water Line Improvements") as necessary to keep them in good working condition, and Grantee shall be responsible for the cost associated therewith. Whenever Grantee performs any construction, maintenance, repairs or replacements to the Water Line Improvements, such work shall be done expeditiously and in a good and workmanlike manner and in accordance

with all applicable laws, codes, rules, statutes and regulations of governmental authorities having jurisdiction thereof. Such work shall be carried out in such manner so as to cause the least amount of disruption to any business operations being conducted on Grantor's property. Grantee shall restore any areas on Grantor's property which are disturbed by Grantee's use of the easement rights granted herein, to the same or better condition as existed prior to such disturbance. In the event that Grantee defaults in its obligation to so maintain the Water Line Improvements, then the Grantor shall have the right to perform such maintenance upon thirty (30) days advance written notice to Grantee and Grantee shall reimburse Grantor within thirty (30) days of receipt of invoice for same. Grantee agrees to indemnify, defend and hold Grantor harmless from any damage to Grantor resulting from the acts of Grantee, its contractors, agents or employees in the exercise of the easement rights contained herein.

DATED: July 1, 2014

STATE OF TENNESSEE

COUNTY OF DAVIDSON

On July 1, 2014 before

me, Tina Lazenby Brown  
personally appeared Clay D. Stephens

VP of Real Estate Legal + Asset Administration

By: Clay D. Stephens  
Clay D. Stephens

Its: VP of Real Estate Legal + Asset Administration

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature

[Signature]



MAIL TAX STATEMENTS AS DIRECTED ABOVE

**EXHIBIT "A"**

**10' WIDE WATER EASEMENT**

All that real property situated in Section 6, Township 1 North, Range 1 East, Humboldt Meridian, in the City of Rio Dell, County of Humboldt, State of California more particularly described as follows:

An easement and right of way TEN (10.00) feet in width, for water pipelines and appurtenances thereto; over, under, across, and through the following described strip of land; together with the free right of ingress and egress thereto; said easement more particularly described as follows:

A strip of land 10 feet wide, the west line being the west line of the real property described as Parcel Two in Document 2007-26351-2, having a record bearing of "North 7 degrees 12 ½ minutes West parallel with and 35 feet easterly from said Highway "L" Line; the east line lying 10 feet easterly, measured perpendicularly, from said east line.

The west line of said easement is to be lengthened or shortened so as to terminate at the north and south lines of said property described in Document 2007-26351-2.

**END OF DESCRIPTION**

Prepared by:

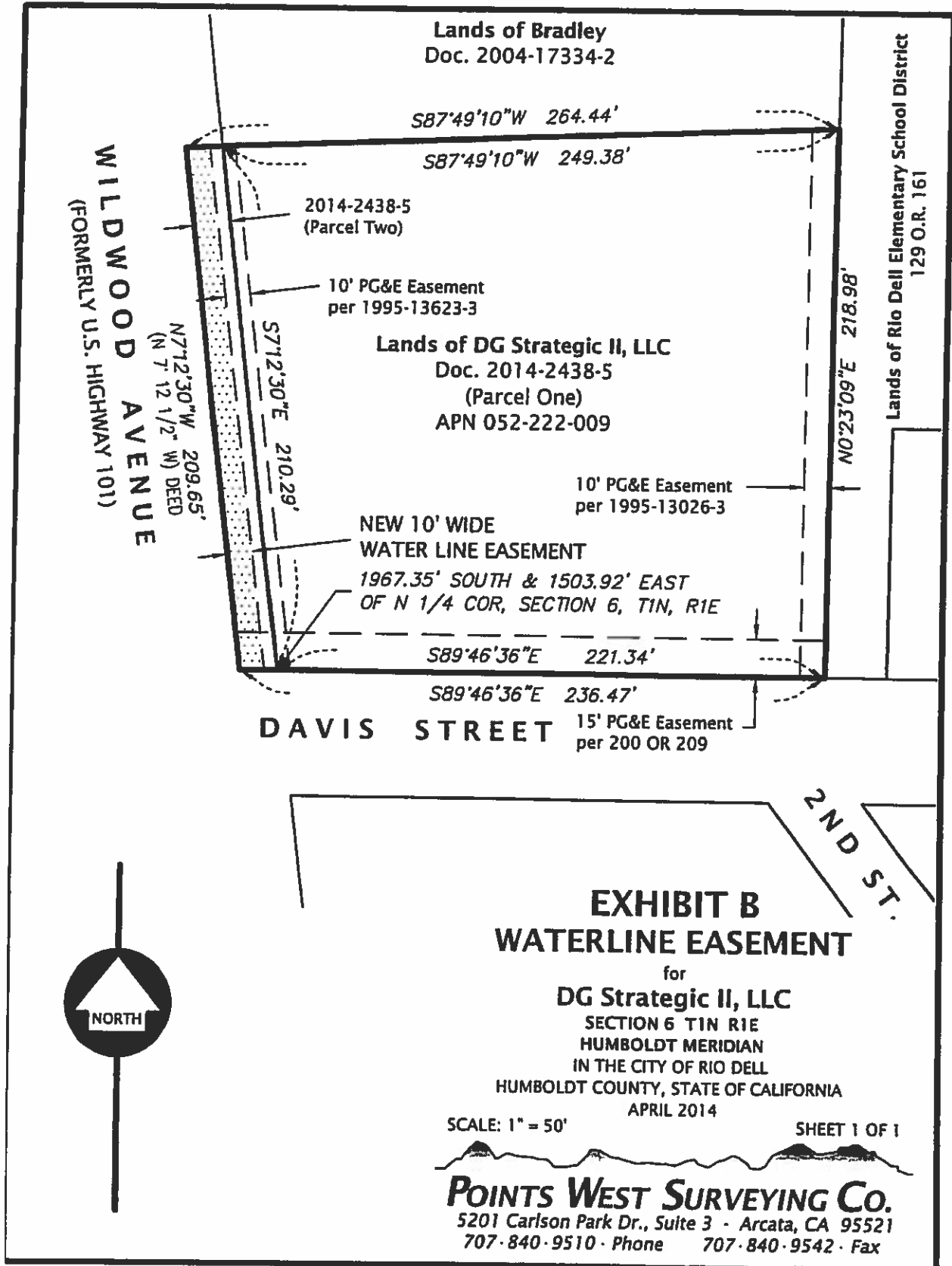
Michael D. Pulley, PLS 7793

Description Dated: 12/12/13

Description Signed: 4/10/14



EXHIBIT "B"



**RESOLUTION NO. 1237 – 2014**



**RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIO DELL ACCEPTING THE EASEMENT DEED FROM DG STRATEGIC II (DOLLAR GENERAL) TO THE CITY OF RIO DELL FOR A 10' WATER LINE EASEMENT ACROSS ASSESSOR PARCEL NUMBER (APN) 052-222-009 AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE CERTIFICATE OF ACCEPTANCE:**

**WHEREAS** as part of the review of the Dollar General's construction project it was discovered that the City did not have an easement for an existing water line running parallel with Wildwood Avenue on the Dollar General's property, APN 052-222-009; and

**WHEREAS** staff required and the Dollar General agreed that the Dollar General grant an easement for the existing waterline; and

**WHEREAS**, the Dollar General has executed the requisite deed/easement; and

**WHEREAS** the City Manager is authorized to execute the Certificate of Acceptance on behalf of the City pursuant to the authority conferred by Resolution No. 1202-2013, dated June 4, 2013.

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Rio Dell accepts the Grant deed and authorizes the City Manager to execute Certificate of Acceptance.

**I HEREBY CERTIFY** that the forgoing Resolution was PASSED and ADOPTED at a regular meeting of the City Council of the City of Rio Dell on August 5, 2014 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

---

Jack Thompson, Mayor



**ATTEST:**

I, Karen Dunham, City Clerk for the City of Rio Dell, State of California, hereby certify the above and foregoing to be a full, true and correct copy of Resolution No. 1237 – 2014 passed and adopted by the City Council of the City of Rio Dell on August 5, 2014.

---

Karen Dunham, City Clerk, City of Rio Dell

675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532



**City of Rio Dell  
Certificate of Acceptance**

**ACCEPTING THE EASEMENT DEED FROM DG STRATEGIC II (DOLLAR GENERAL) TO THE  
CITY OF RIO DELL FOR A 10' WATER LINE EASEMENT ACROSS ASSESSOR PARCEL  
NUMBER (APN) 052-222-009.**

This is to certify that the interest in the real property conveyed by Deed from DG Strategic II, LLC a Tennessee limited liability corporation dated July 1, 2014 to the City of Rio Dell, a municipal corporation is hereby accepted by order of the undersigned officer on behalf of the City of Rio Dell pursuant to the authority conferred by Resolution No. 1202-2013, dated June 4, 2013.

Dated \_\_\_\_\_

\_\_\_\_\_  
Kyle C. Knopp, City Manager  
City of Rio Dell

State of California  
County of Humboldt

On July 30, 2014 before me, Joanne Farley personally appeared Kyle C. Knopp who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

675 Wildwood Avenue  
Rio Dell, CA 95562  
(707) 764-3532



**City of Rio Dell  
Certificate of Acceptance**

**ACCEPTING THE EASEMENT DEED FROM DG STRATEGIC II (DOLLAR GENERAL) TO THE  
CITY OF RIO DELL FOR A 10' WATER LINE EASEMENT ACROSS ASSESSOR PARCEL  
NUMBER (APN) 052-222-009.**

This is to certify that the interest in the real property conveyed by Deed from DG Strategic II, LLC a Tennessee limited liability corporation dated July 1, 2014 to the City of Rio Dell, a municipal corporation is hereby accepted by order of the undersigned officer on behalf of the City of Rio Dell pursuant to the authority conferred by Resolution No. 1202-2013, dated June 4, 2013.

Dated \_\_\_\_\_

\_\_\_\_\_  
Kyle C. Knopp, City Manager  
City of Rio Dell

State of California  
County of Humboldt

On July 30, 2014 before me, Joanne Farley personally appeared Kyle C. Knopp who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature \_\_\_\_\_ (Seal)

This instrument is for the  
benefit of the City of Rio Dell

**Recording Requested by:**  
City of Rio Dell  
Community Development Department

Exempt Government Code § 27383

**Return to:**  
City of Rio Dell  
675 Wildwood Avenue  
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APN: 052-222-009

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- ☐ ] computed on full value less value of liens or encumbrances remaining at time of sale,
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FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

**DG Strategic II, LLC, a Tennessee limited liability corporation (hereon referred to as GRANTOR),**

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**City of Rio Dell, a municipal corporation (hereon referred to as GRANTEE)**

a non-exclusive, perpetual easement in the County of Humboldt, State of California in the location described on EXHIBIT "A" attached hereto, and as generally depicted on EXHIBIT "B" attached hereto and incorporated herein by reference (the "Water Line Easement Area"), for purposes of installing and maintaining a water line under, across, upon and through the Water Line Easement Area. Grantee shall maintain and repair the improvements installed by Grantee within the Water Line Easement Area (the "Water Line Improvements") as necessary to keep them in good working condition, and Grantee shall be responsible for the cost associated therewith. Whenever Grantee performs any construction, maintenance, repairs or replacements to the Water Line Improvements, such work shall be done expeditiously and in a good and workmanlike manner and in accordance

with all applicable laws, codes, rules, statutes and regulations of governmental authorities having jurisdiction thereof. Such work shall be carried out in such manner so as to cause the least amount of disruption to any business operations being conducted on Grantor's property. Grantee shall restore any areas on Grantor's property which are disturbed by Grantee's use of the easement rights granted herein, to the same or better condition as existed prior to such disturbance. In the event that Grantee defaults in its obligation to so maintain the Water Line Improvements, then the Grantor shall have the right to perform such maintenance upon thirty (30) days advance written notice to Grantee and Grantee shall reimburse Grantor within thirty (30) days of receipt of invoice for same. Grantee agrees to indemnify, defend and hold Grantor harmless from any damage to Grantor resulting from the acts of Grantee, its contractors, agents or employees in the exercise of the easement rights contained herein.

DATED: July 1, 2014

By: Clay D. Stephens  
Clay D. Stephens

STATE OF TENNESSEE  
COUNTY OF DAVIDSON

On July 1, 2014 before  
me, Tina Lazenby Brown

personally appeared Clay D. Stephens  
VP of Real Estate Legal & Asset Administration

Its: VP of Real Estate Legal & Asset Administration

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature

[Signature]



MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT "A"

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END OF DESCRIPTION

Prepared by:

Michael D. Pulley, PLS 7793

Description Dated: 12/12/13

Description Signed: 4/16/14





EXHIBIT "B"

